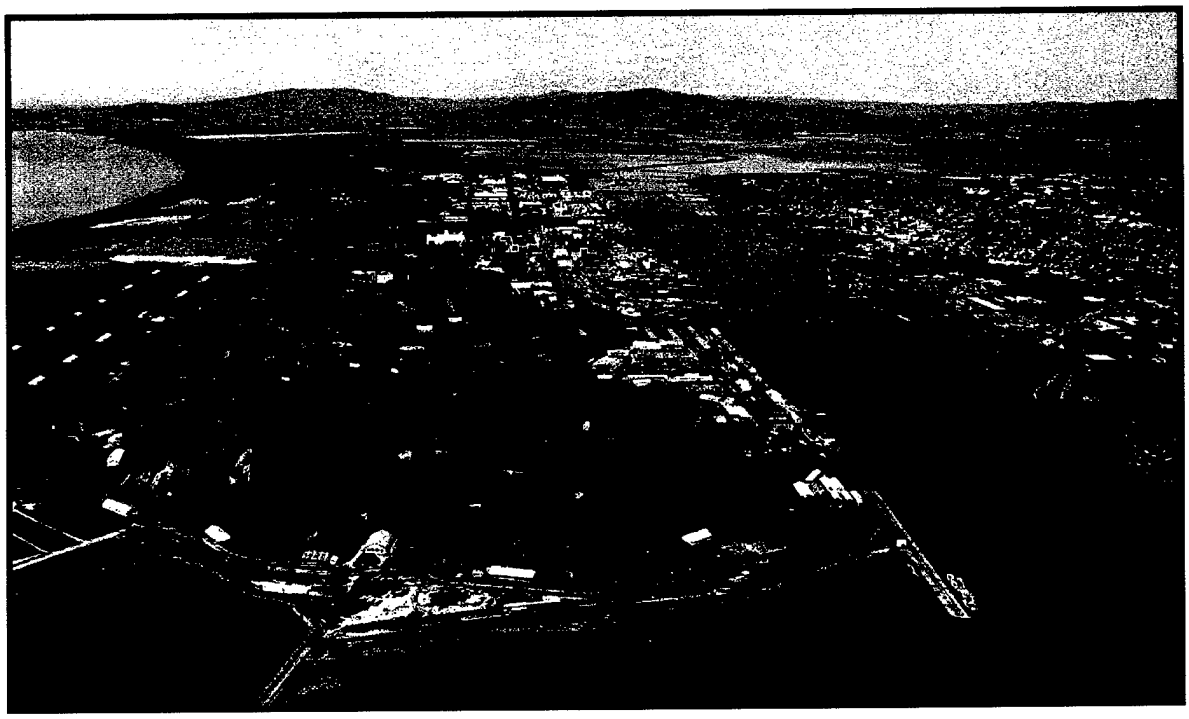
Final

Environmental Impact Statement/ Environmental Impact Report

for the Disposal and Reuse of Mare Island Naval Shipyard Vallejo, California

SCH #94093029



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Volume 1

April 1998

ENGINEERING FIELD ACTIVITY, WEST
NAVAL FACILITIES ENGINEERING COMMAND
and
CITY OF VALLEJO, CALIFORNIA

DEPARTMENT OF THE NAVY
ENGINEERING FIELD ACTIVITY, WEST
NAVAL FACILITIES ENGINEERING COMMAND
900 COMMODORE DRIVE
SAN BRUNO, CALIFORNIA 94066-5006

IN REPLY REFER TO:

5090.1B
7032JH/EP8-1445
27 April 1998

SUBJECT: NOTICE OF AVAILABILITY OF THE FINAL ENVRONMENTAL IMPACT STATEMENT/ENVIRONMENTAL IMPACT REPORT FOR THE DISPOSAL AND REUSE OF MARE ISLAND NAVAL SHIPYARD, VALLEJO, CALIFORNIA

Mare Island Naval Shipyard closed on April 1, 1996 pursuant to the Defense Base Closure and Realignment Act of 1990, Pub. L. 101-510, Title XXIX, 10 U.S.C. Sec. 2687 note, and specific base closure decisions approved by President Clinton and accepted by the 103rd Congress in October 1993.

As part of this process, the Department of the Navy and the City of Vallejo prepared a joint Environmental Impact Statement/Environmental Impact Report (EIS/EIR) to evaluate the potential for significant environmental effects of Navy disposal and community reuse of the Mare Island property located in Vallejo, California. The Final EIS/EIR has been prepared in accordance with Section 102 (2)(c) of the National Environmental Policy Act (NEPA) of 1969, as implemented by the Council on Environmental Quality regulations, 40 C.F.R. Parts 1500-1508, and the California Environmental Quality Act (CEQA), Cal. Pub. Res. Code Sec. 21000, *et seq.*, as amended.

The Navy's NEPA action evaluated in the Final EIS/EIR is the disposal of surplus federal property at Mare Island. The local CEQA project evaluated is the reuse of the property in accordance with Vallejo's Final Mare Island Reuse Plan, completed in July 1994. The Reuse Plan assumes extensive use of existing structures and the continuance of many of the property's historic land uses. In addition, a regional park, expanded golf course, new retail and residential area and a southern crossing bridge are also envisioned. The Reuse Plan was subsequently modified in March 1998 to reflect portions of the property designated for transfer to the U.S. Army.

The Final EIS/EIR also evaluates two additional reuse scenarios and a No Action alternative. The Medium Density alternative is similar to the Final Mare Island Reuse Plan, except that reuse would be at reduced densities and the southern crossing bridge and new retail and residential areas would not be developed. Under an Open Space alternative, the southern crossing bridge would not be constructed and larger areas, including the golf course and rifle range, would be removed and the area kept as open

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space. Under the No Action alternative, the property would remain in federal ownership in a caretaker status and interim leasing would be phased out.

There are no significant impacts associated with the Navy disposal action or the No Action alternative. The only significant and unmitigable impacts would be land use and visual impacts resulting from construction of the southern crossing bridge. Potentially significant and mitigable environmental impacts from reuse would occur under all reuse alternatives; however, implementation of identified mitigation measures would reduce these environmental impacts to non-significant levels. In addition, the Final EIS/EIR incorporates and responds to comments received on the Draft EIS/EIR.

The Final EIS/EIR is enclosed. It is also available for review at the following public libraries in the vicinity of Mare Island:

John F. Kennedy Library	505 Santa Clara Street	Vallejo, CA
Springstowne Library	1003 Oakwood Avenue	Vallejo, CA
Vacaville Library	1020 Ulatis Drive	Vacaville, CA
Fairfield-Suisun Library	150 Kentucky	Fairfield, CA
Benicia Library	150 L Street	Benicia, CA
Suisun City Library	333 Sunset	Suisun, CA
Dixon Public Library	135 East B Street	Dixon, CA
Napa Library	1150 Division Street	Napa, CA
St. Helena Library	1492 Library Lane	St. Helena, CA
Calistoga Library	1108 Myrtle Street	Calistoga, CA
Yountville Library		Yountville, CA

An announcement of the availability of the Final EIS/EIR is being published in the Federal Register on May 1, 1998. This publication will start a 30-day public review period, ending on May 31, 1998. After the end of the public review period, the Navy will issue a public Record of Decision.

During the public review period, comments or questions on the Final EIS/EIR may be directed to Mr. Jerry Hemstock at the following address:

Commanding Officer
Engineering Field Activity West
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, CA 94066-5006

Attn: Mr. Jerry Hemstock (Code 7032)

Telephone: (650) 244-3023 or Fax: (650) 244-3206

For further information on the reuse of the Mare Island property, contact Ms. Ann Merideth, City of Vallejo, Planning Division, 555 Santa Clara Avenue, P.O. Box 3068, Vallejo, California 94590-5934, telephone (707) 648-4326, Fax (707) 552-0163. Thank you for your participation in this process.

John H. Kennedy

JOHN H. KENNEDY
Head, Planning Specialist Support Team
By direction

Enclosure

TC 0118

FINAL
ENVIRONMENTAL IMPACT STATEMENT (EIS)/ ENVIRONMENTAL IMPACT REPORT (EIR) FOR THE DISPOSAL AND REUSE OF MARE ISLAND NAVAL SHIPYARD VALLEJO, CALIFORNIA

Lead Agency for the EIS:	US Department of the Navy
Lead Agency for the EIR:	City of Vallejo, California
Title of Proposed Action:	Disposal and Reuse of Mare Island Naval Shipyard, Vallejo, California
Affected Jurisdictions:	City of Vallejo and Solano County, California
Designation:	Environmental Impact Statement/Environmental Impact Report
State Clearinghouse #:	SCH# 94093029

ABSTRACT

Pursuant to the Defense Base Closure and Realignment Act of 1990, Pub. L. 101-510, Title XXIX, 10 U.S.C. §2687 note, as implemented by the base closure process of 1993, Mare Island Naval Shipyard closed in April 1996. This joint EIS/EIR has been prepared in accordance with National Environmental Policy Act of 1969 (NEPA), 42 U.S.C. §4321 *et seq.*, and California Environmental Quality Act (CEQA), Cal. Pub. Res. Code §21000 *et seq.*, statutes and guidelines to analyze the potential environmental consequences from the proposed disposal and reuse of Federal surplus land at Mare Island Naval Shipyard.

The proposed action evaluated in the EIS/EIR is the disposal of Federal surplus land at the former Mare Island Naval Shipyard and reuse of the site and facilities as proposed under the community reuse plan, developed by the City of Vallejo. Community reuse alternatives analyzed in the EIS/EIR include the Reuse Plan Alternative, a Medium Density Alternative, and the Open Space Alternative. The No Action Alternative assumes that surplus land at Mare Island would be retained in Navy ownership in a caretaker status. The EIS/EIR includes analyses of land use, socioeconomics, public services, cultural resources, aesthetics and scenic resources, biological resources, water resources, geology and soils, traffic and circulation, air quality, noise, utilities, and hazardous materials and waste.

Potentially significant and mitigable adverse environmental impacts include impacts to land use, socioeconomics, public services, aesthetics and scenic resources, biological resources, water resources, geology and soils, traffic and circulation, air quality, noise and utilities. Mitigation measures have been identified to reduce most environmental impacts to nonsignificant or acceptable levels. Construction of the southern crossing bridge would create significant and not mitigable land use and visual impacts. Agreements between the Navy, the City of Vallejo, and other regulating agencies have been prepared with regards to cultural resources, public services, utilities, and biological resources. Remediation of contaminated areas will continue to be the responsibility of the Navy.

For Further Information:

Engineering Field Activity, West
900 Commodore Drive
San Bruno, California 94066-5006
Attn: Mr. Jerry Hemstock, Code 703JH
Phone: (650) 244-3023
Fax: (650) 244-3206

City of Vallejo, Development Services Dept.
555 Santa Clara Street
Vallejo, California 94590
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Phone: (707) 648-4326
Fax: (707) 552-0163

April 1998

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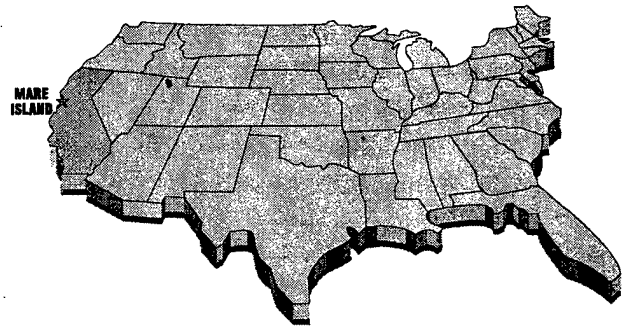
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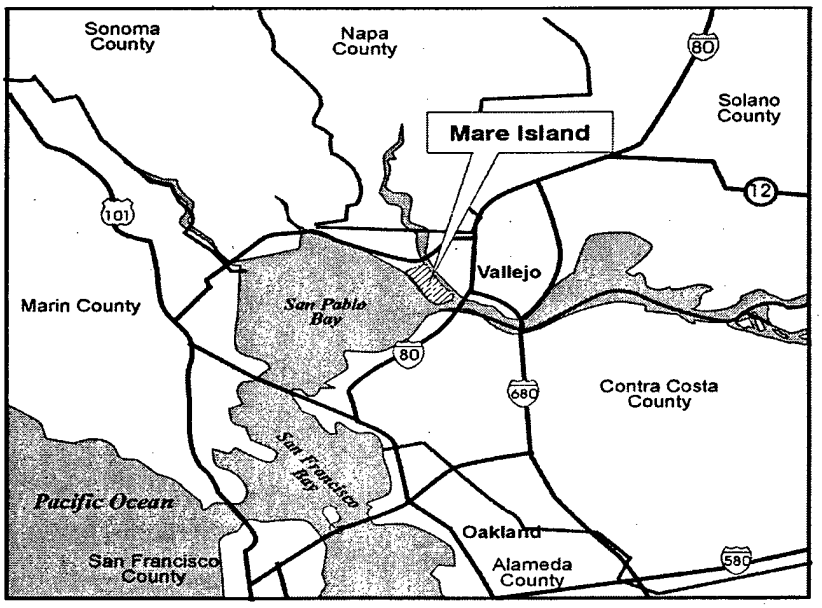
EXECUTIVE SUMMARY

This joint environmental impact statement/environmental impact report (EIS/EIR) evaluates the potential impacts to the environment that may result from the Navy disposal and community reuse of Federal surplus property at the former Mare Island Naval Shipyard in Vallejo, California. Mare Island Naval Shipyard closed on April 1, 1996, pursuant to the Defense Base Closure and Realignment Act of 1990, Pub. L. 101-510, Title XXIX, 10 U.S.C. §2687, note, referred to in this document as DBCRA 1990. This document has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, 42 U.S.C. §4321 *et seq.*, as amended, the California Environmental Quality Act (CEQA), Cal. Pub. Res. Code §21000 *et seq.*, as amended, and implementing guidelines, the Council on Environmental Quality (CEQ) regulations on implementing NEPA, 40 C.F.R. §1500 *et seq.*, Navy guidelines (OPNAVINST 5090.1B), and DBCRA 1990, as amended.

This Final EIS/EIR includes all of the information and analysis contained in the Draft EIS/EIR circulated for public review and comment. It also contains responses to those comments and revisions to this volume made in response to those comments.

The NEPA Federal action evaluated in this EIS/EIR is the disposal of Federal surplus land, while the local action evaluated is the proposed community reuse of surplus property at Mare Island (Figure ES-1), presented as 3 reuse alternatives.

Figure ES-1
Regional Map



BACKGROUND

Mare Island is approximately 3.5 miles long by 1 mile wide. Historic calculations identified approximately 5,460 acres at Mare Island, which have been modified by more recent calculations to approximately 5,252 acres. This revised acreage primarily reflects a more accurate assessment of the submerged land at Mare Island. The 5,252 acres include approximately 1,465 acres of dry land and approximately 3,787 acres of wetlands, submerged lands, and dredge disposal areas.

The former Mare Island Naval Shipyard facility includes Mare Island, a causeway connecting Mare Island and Vallejo, the off-island Roosevelt Terrace housing complex, the Main Entrance, and a railroad spur, which extends from the island through Vallejo (Figure ES-2). The shipyard is developed with approximately 960 buildings, totaling 10.5 million square feet. Building use has included industrial, office, residential, educational, commercial, recreational, cultural, and institutional uses.

The shipyard began operation in 1854 when it was used to dock the Navy's Pacific Squadron. During World War II, Mare Island grew into one of the world's largest ship construction and repair facilities, employing up to 41,053 persons at its peak. In the 1950s, the Department of the Navy designated the shipyard as a building and overhaul yard for submarines; the shipyard operated in this capacity until shipyard work ceased in the spring of 1995.

PURPOSE AND NEED

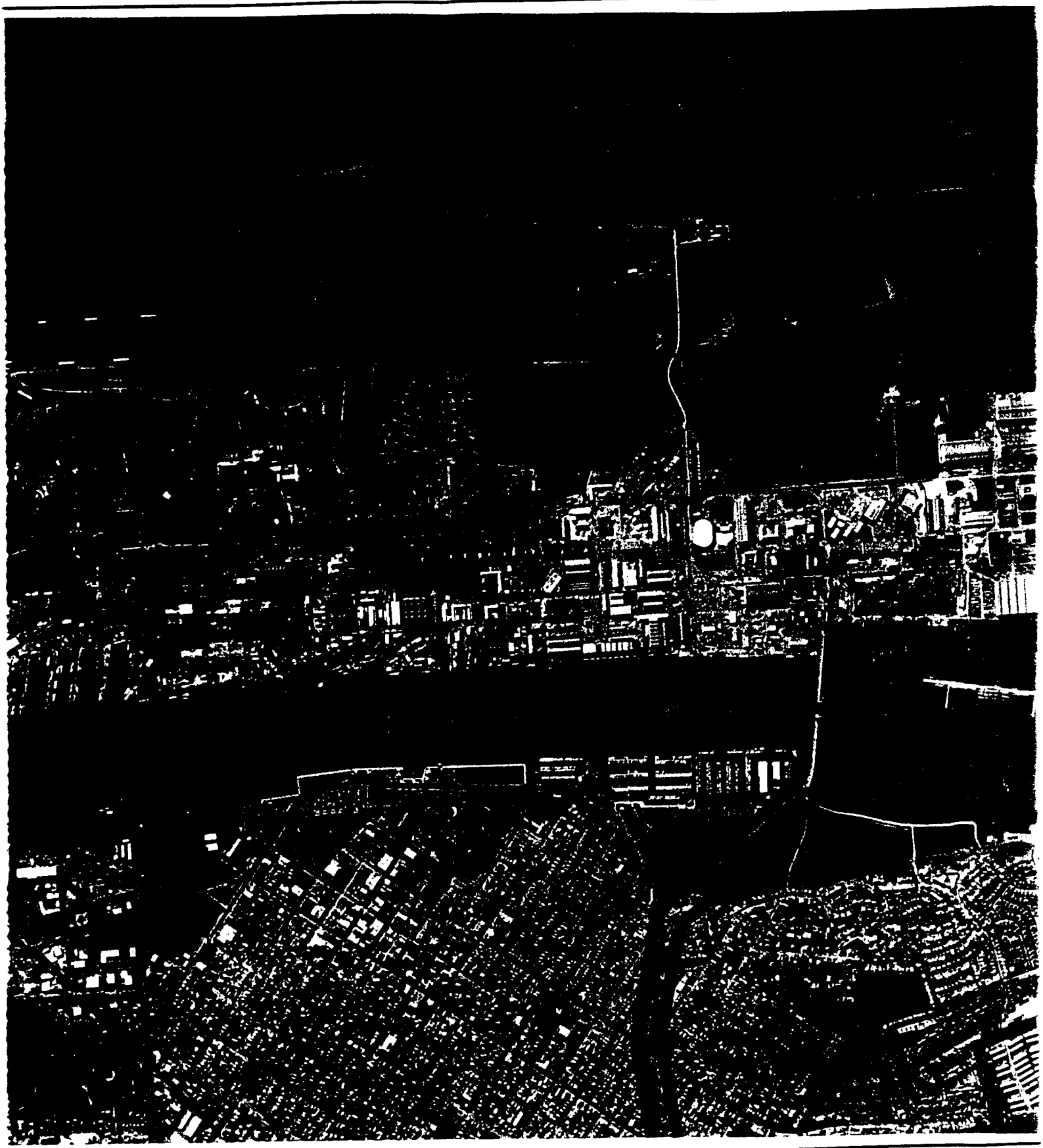
The Defense Authorization Act for Fiscal Years 1992 through 1995 and DBCRA 1990, Pub. L. 101-510, Title XXIX, 10 U.S.C §2687, note, established a process to close and realign military bases. As part of that process, the Base Realignment and Closure (BRAC) Commission, recommended that the Secretary of Defense "close Mare Island Naval Shipyard, Vallejo, California". The BRAC Commission recommendation was approved by President Clinton and accepted by the 103rd Congress in October 1993. As a result, active shipyard work ceased in April 1995, and operational closure occurred on April 1, 1996.

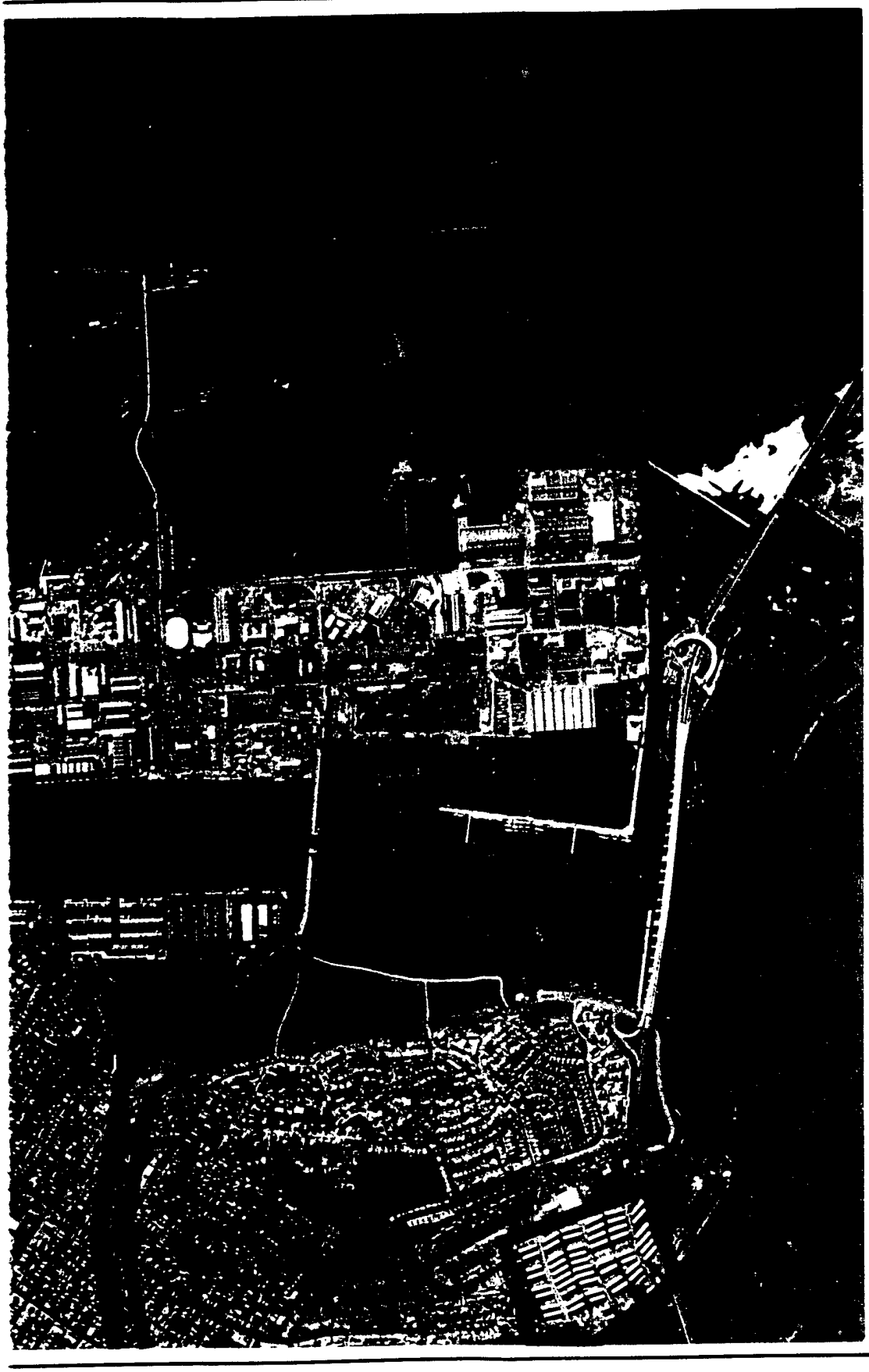
The action considered in this EIS/EIR is the disposal and reuse of surplus property at the shipyard. The proposed Federal action is the disposal of surplus property on the shipyard, in compliance with Federal Property Management Regulations (FPMR), DBCRA 1990, as amended, the Base Closure and Community Redevelopment and Homeless Assistance Act of 1994 (Redevelopment Act), Pub. L. 103-421, and the 1994 Defense



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Approximate Boundaries of
Mare Island Naval Shipyard





Mare Island Naval Shipyard

Mare Island, California

(3)

Figure ES-2

Authorization Act. As part of the disposal process, Vallejo has been recognized by the Secretary of Defense as the local redevelopment authority (LRA). In this role, Vallejo has developed a reuse plan for Mare Island. The local action considered in this document is community reuse of shipyard surplus property, as proposed by the reuse plan. Alternatives to buildout of the reuse plan also are considered.

DOCUMENT PURPOSE

This joint, or integrated, EIS/EIR has been prepared in accordance with NEPA and CEQA to assess the potential environmental impacts of shipyard transfer (also called disposal) and reuse. This document assesses environmental impacts of disposing of surplus land at the shipyard and implementing the Final Mare Island Reuse Plan (also called the Reuse Plan Alternative) or alternatives to that plan at a general "program" level. It does not provide information on development options more detailed than the ones presented in the community reuse plan. Such options will receive further environmental analyses under CEQA when specific development plans are presented to Vallejo for consideration. The reuse plan encompasses surplus land, state reversionary land, and land subject to Federal agency transfer.

The Navy will use the EIS in its consideration of disposal of surplus land in its NEPA Record of Decision (ROD). The ROD will consider significant impacts and mitigation measures that occur on surplus land as a result of Navy disposal and community reuse. Property reuse will occur after it is conveyed from Federal ownership, and implementing mitigation measures for reuse environmental impacts will be the responsibility of the acquiring non-Federal entity. Reuse impacts on lands reverting to the state and lands subject to Federal agency transfer are discussed in Section 5.5, Cumulative Impacts. The Navy has no control over the future use of reversionary Navy property after reversion to the State of California, nor does the Navy have control over properties transferred to other Federal agencies. Following property disposal, no additional NEPA review by the Navy is anticipated.

Vallejo will certify and use the EIS/EIR in considering any necessary amendments to its general plan, in adopting a specific plan and/or planned development master plan, and in zoning the island as a result of the reuse plan. Should any Vallejo approvals include significant unavoidable environmental impacts, the city will adopt findings, as required by CEQA. After the joint document is certified, more detailed plans will be prepared for specific subareas.

The EIS/EIR also serves as the required CEQA documentation for designating Mare Island as a local agency military base recovery area (LAMBRA), under the state's Local Military Base Recovery Area Act (AB

693). The purpose of that act is to stimulate business and industrial growth in areas experiencing military base closures by relaxing regulatory controls and providing tax credits and other economic incentives to private sector investors within a LAMBRA.

RELATED PROCESSES AND DOCUMENTATION

Basewide Environmental Baseline Survey (EBS). DOD policy requires the preparation of an EBS prior to selling, leasing, or transferring real property. A basewide EBS reports the factual representation of the environmental conditions for all property at an installation. The EBS also complies with the requirements of the Community Environmental Response Facilitation Act (CERFA), 42 U.S.C. §9601 note (West 1995), an amendment to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. §9601 *et seq.* The Final EBS for Mare Island Naval Shipyard was completed in December 1994 (US Navy 1994c).

BRAC Cleanup Plan (BCP). The BCP for a closing base provides the status of ongoing environmental restoration and associated compliance programs. This was mandated by President Clinton's July 2, 1993, plan to expedite cleanup and to promote early reuse of closing bases. The BCP for Mare Island Naval Shipyard (US Navy 1994b) was completed on March 8, 1994, and most recently was revised on March 1, 1997.

Related NEPA Documentation. The Navy is responsible for preparing separate NEPA documentation (categorical exclusions) for the transfer of property to the US Coast Guard, US Forest Service, US Fish and Wildlife Service, and US Army. Cumulative impacts of the reuse of Mare Island properties transferred to other Federal agencies are discussed in Chapter 5, Section 5.5.

DISPOSAL PROCESS

The disposal of surplus land at the former Mare Island Naval Shipyard is the Federal action considered in this EIS/EIR. The disposal process encompasses several sequential actions, as outlined in Figure ES-3.

The Navy is responsible for environmental cleanup and disposal of the property, while Vallejo is responsible for preparing and implementing a reuse plan for the property. Through this process, some of the property and facilities at Mare Island will be transferred to other Federal agencies, some lands previously acquired from the State of California will revert to state ownership, and the remaining property, identified as Federal surplus land, will be transferred out of Federal ownership. Table ES-1 illustrates the disposition of land at Mare Island.

Figure ES-3
Primary Elements of the Military Base Disposal Process

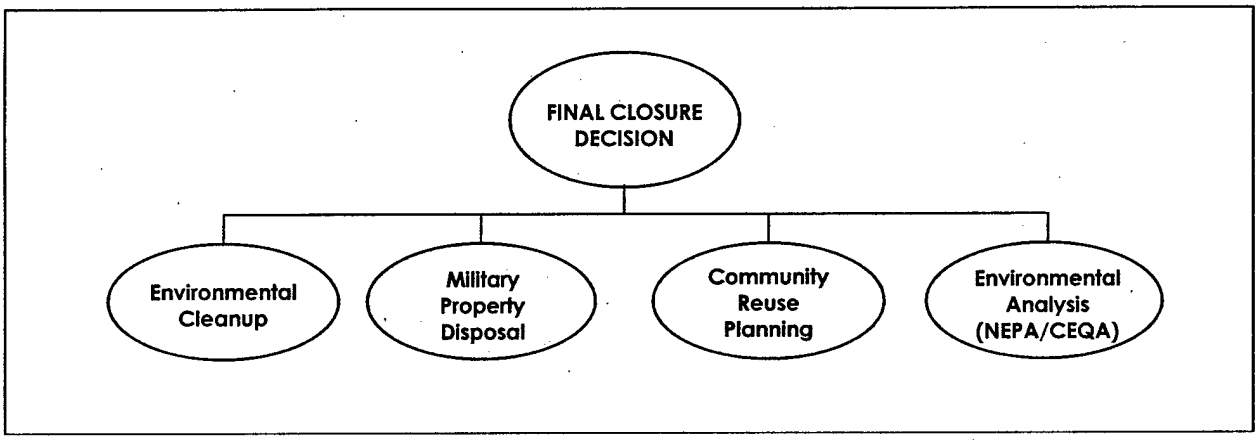


Table ES-1
Disposition of Land at Mare Island Naval Shipyard

Method of Disposition	Recipient	Acreage	Proposed Reuse
Federal Agency Transfer[1]	US Army	36	Army Reserve Center
	US Coast Guard	1	Communication Tower
	US Fish & Wildlife Service	162	Wildlife Refuge/Interpretive Center
	US Forest Service	8	Regional Office
Reversionary Conveyance	State of California	3,629	Tidelands and Submerged Lands
Disposal of Surplus Property[2]	LRA/Non-Federal entity	1,416	Development as described in Mare Island Final Reuse Plan
Total		5,252	

Source: US Navy

[1] Numbers have been rounded to next highest acre.

[2] This area includes approximately 81 acres covered by conservation easements.

The Navy has completed the DOD and Federal screening process for Mare Island. Eleven Federal agencies initially expressed interest in excess property at the shipyard, but only 4 of the agencies ultimately submitted requests for property transfer to the Navy—the US Coast Guard (USCG), US Forest Service (USFS), US Fish and Wildlife Service (USFWS), and US Army. The approximate acreages and proposed reuses for these Federal property transfers are indicated in Table ES-1 above.

A large portion of Mare Island contains tidal and submerged lands that will revert to the State of California. These lands, totaling approximately 3,629 acres, were granted to the United States by the State of California for developing Mare Island Naval Shipyard and are not part of the Navy

disposal action. In addition to the reversionary property, the excess property identified above for transfer to other Federal agencies totals approximately 207 acres. The remaining 1,416 acres of Mare Island property was determined to be Federal surplus land, available for conveyance to Vallejo or other non-Federal entities.

In accordance with the Redevelopment Act and Homeless Assistance Act, the LRA completed the screening process for state, local, and homeless assistance needs in January 1996. A proposal from the Christian Help Center/Lord's Fellowship Center, a homeless assistance provider, was recommended for approval. An agreement with the Lord's Fellowship was negotiated to provide training and education services to the local homeless population. The US Department of Housing and Urban Development (HUD) approved the Final Mare Island Reuse Plan on July 15, 1996. The Mare Island Final Reuse Plan was modified by the Vallejo City Council on March 10, 1998 to reflect the transfer of portions of Reuse Areas 5, 9 and 10 to the US Army.

PUBLIC INVOLVEMENT

The EIS/EIR process is designed to involve the public in Federal and local decision-making. Opportunities to comment on and participate in the process have been provided during the preparation of this EIS/EIR. Appendix B provides copies of public involvement materials, including a list of organizations responding to the scoping letter and a summary of the public meeting.

Scoping

Public involvement actions taken included publishing a Notice of Intent (NOI) in the Federal Register; conducting a public scoping meeting to solicit comments and to identify issues of concern; publishing public notices of hearings, mailing public announcements, and coordinating media coverage, press releases, and features articles; and creating and updating an extensive mailing list to disseminate information.

Environmental Justice

A goal for public involvement, as required under the Executive Order on Federal Actions to Address Environmental Justice in Minority and Low Income Populations (E.O. 12898), has been to include affected low-income and minority populations in the public participation process. To achieve this, the following specific actions were implemented:

- Collected and reviewed US Census and related data to identify low-income or minority population and neighborhoods;

- Conducted televised public meetings at the Vallejo city offices in downtown Vallejo with easy access by car or public transit;

- Notified and requested comments from a range of neighborhood associations and minority organizations that may be affected by or interested in the disposal and reuse of Mare Island; and

- Announced the public meetings in newspapers with a wide circulation and encouraged written comments for those unable to attend the meetings.

Draft EIS/EIR

The public was invited to review and comment on the Draft EIS/EIR. A Notice of Availability (NOA) was published in the Federal Register on September 1, 1995, public notices were mailed to those on the mailing list, and press releases were furnished to the local news media. When the Draft EIS/EIR was published, a notice of completion was filed with the State Clearinghouse, beginning a 45-day public comment period. This comment period provided an opportunity for the public to review the issues addressed in the impact analysis and to offer appropriate comments on any aspect of the process. During this comment period, 19 letters were received from interested groups and Federal, state, and local agencies.

A public meeting was held at the Vallejo City Hall on September 27, 1995, to formally receive oral and written comments on the Draft EIS/EIR. The date and time of the meeting was announced in the media and was included in the transmittal letter accompanying the Draft EIS/EIR. Ten individuals attended this meeting, and 4 individuals presented oral comments. A transcript of their comments and responses to the comments are provided in Chapter 10 of this Final EIS/EIR.

Final EIS/EIR

The Final EIS/EIR addresses the resolution of the procedural or substantive requirements of several related environmental statutes and regulations. The consultation requirements under the Endangered Species Act, 16 U.S.C. §1531 *et seq.;* the National Historic Preservation Act, 16 U.S.C. §470 *et seq.*; and the Base Closure Community Redevelopment and Homeless Assistance Act, Pub. L. 103-421, were completed since the issuance of the Draft EIS/EIR and are fully reflected in this document.

This Final EIS/EIR, which incorporates and responds to comments received on the Draft EIS/EIR, will be furnished to persons registering official comment on the draft document and to others requesting a copy. Copies of the comment letters received and the responses to these letters can be found in Chapter 10. A NOA of the Final EIS/EIR will be published in the Federal Register and in public notices and press releases.

ALTERNATIVES, INCLUDING THE PROPOSED ACTION

The Preferred Alternative (the NEPA "proposed action" and the CEQA "project") evaluated in this EIS/EIR is the disposal of Federal surplus land at the former Mare Island Naval Shipyard and reuse of the property and facilities as proposed under the Final Mare Island Reuse Plan. The reuse alternatives considered in this EIS/EIR are based in large part on the Mare Island Final Reuse Plan developed by the Mare Island Futures Project through the community planning process summarized below.

Some of the land included in the reuse plan and alternatives is being transferred directly to other Federal agencies and is therefore not surplus land analyzed as part of the reuse alternatives. The reuse plan also includes reversionary lands previously granted to the United States by the State of California for developing Mare Island Naval Shipyard. While the description of the reuse plan and alternatives identifies the Federal transfer and state reversionary lands, these are not part of the Navy disposal action, and potential uses of these lands will be addressed in this EIS/EIR as cumulative projects in Chapter 5.

Community Reuse Planning

The reuse planning process for Mare Island began with Vallejo's creation of the Mare Island Futures Project immediately after the 1993 BRAC closure list was approved by the President. Two groups, the Mare Island Futures Legislative Committee and the Mare Island Futures Work Group, were created to guide the city's reuse efforts. Based on the findings of a market feasibility evaluation, economic analysis, and input from 5 resource groups (Human Services, Retraining, Employment Development, Educational Facilities, and Recreation, Open Space, and Arts) and 1 Navy committee (Historical Preservation and Archaeology), the work group developed a reuse plan. The Final Mare Island Reuse Plan was accepted by the Vallejo City Council in July 1994 and was approved by HUD in July 1996. The Final Reuse Plan was modified by the Vallejo City Council on March 10, 1998 to reflect the transfer of portions of Reuse Areas 5, 9, and 10 to the US Army.

While preparing the reuse plan, all meetings of the work group, Legislative Committee, and resource groups were open to the public and were advertised on local television and in the local newspaper. All materials, including reports, videos, and other informational items, were made available to the public.

Reuse Alternatives Overview

Reuse alternatives analyzed in this EIS/EIR include the Reuse Plan Alternative (Preferred Alternative), a Medium Density Alternative, and an Open Space Alternative. The No Action Alternative, required by NEPA and CEQA, also is analyzed. Under the No Action Alternative, the facility would be closed but would remain in Federal ownership. Buildout of each alternative would occur in 2020. Disposal of surplus property at Mare Island is assumed a part of each reuse alternative. Conservation easements developed through the Endangered Species Act consultation process are included in each reuse alternative.

Reuse Plan Alternative—Preferred Alternative

Under the Reuse Plan Alternative, the Navy would dispose of its surplus property at the shipyard, and a local entity or entities would implement the reuse plan for surplus land in each of the planning areas. This alternative would use existing structures extensively and largely would continue historic land uses. Under the Reuse Plan Alternative, a regional park would be developed, the golf course would be expanded to 18 holes, the rifle range would be relocated, and there would be substantial industrial, commercial, and community reuse of the island. A new retail/residential area would be developed. The Reuse Plan Alternative also includes extensive improvements to island infrastructure and roadways to serve the proposed reuses.

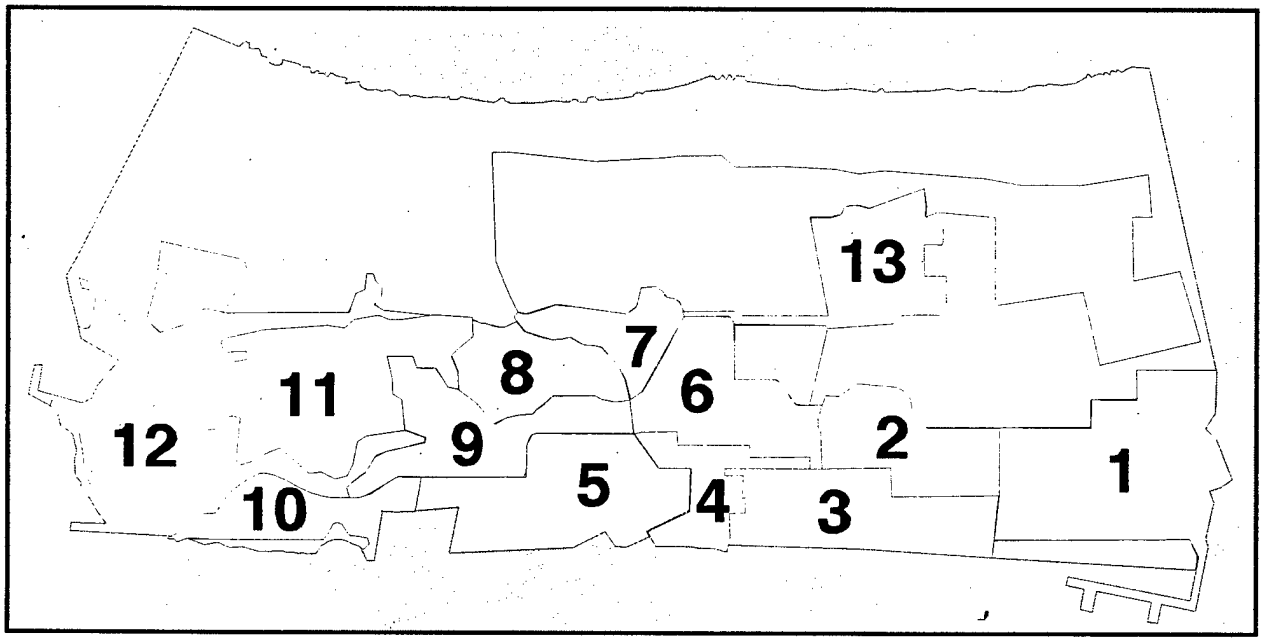
Buildout of the Reuse Plan Alternative in 2020 would include constructing a bridge across Mare Island Strait at the southern end of the island (the southern crossing). General locations for the bridge are indicated in the reuse plan, but detailed designs or right-of-way determinations have not been developed. Following development of a more detailed concept, a separate environment review and permitting process would be required prior to implementing the southern crossing.

The reuse plan identifies 13 reuse areas along the eastern side of the island, as well as unnumbered wetland and dredge disposal areas along the western side of the island (Figure ES-4). Reuse area designations are generally representative of the historic land uses. Unnumbered reuse areas also include the Main Entrance, Roosevelt Terrace Housing complex, and the

railroad spur, which are part of the shipyard property but are located off the island.

There would be approximately 5.7 million square feet of nonresidential building uses (excluding civic/recreation space) and 1,786 residential units both on and off Mare Island at full buildout of the Reuse Plan Alternative. Approximately 18 miles of streets would be improved, and 7 miles of new road would be built. Eight signalized traffic intersections would be constructed. Additionally, various utilities would be abandoned or upgraded. The projected population of Mare Island at buildout would be approximately 5,075, including residents of Roosevelt Terrace; projected employment would be approximately 9,669 workers.

Figure ES-4
Mare Island Reuse Plan



Medium Density Alternative

This alternative represents a lower density development of the Reuse Plan Alternative. It does not include the bridge across Mare Island Strait (the southern crossing) or retail and residential development adjacent to the regional park. Additionally, the rifle range would remain in its current location. The Medium Density Alternative is intended to reduce potential impacts on traffic, air quality, and noise and represents a moderate level of buildout for the island.

Minimal construction of multifamily residential or commercial/industrial structures would be anticipated under this alternative; rather, certain existing facilities would be converted or remodeled. Approximately 3.1 million square feet of nonresidential space (excluding civic/recreation space) and 996 residential units would be in use on and off the island under the Medium Density Alternative.

Approximately 18 miles of streets would be improved, and 3 miles of road and 5 signalized traffic intersections would be constructed. Additionally, various utilities would be abandoned or upgraded. Under this alternative, the population of Mare Island would be approximately 3,142, including residents of Roosevelt Terrace; projected employment would be approximately 5,273 workers.

Open Space Alternative

This alternative incorporates additional environmental protection strategies on surplus land suggested by the public and concerned agencies during the scoping process. Under this alternative, the golf course and rifle range would be eliminated, with the golf course land incorporated into a proposed regional park. The rifle range site would be converted to recreational uses serving the surrounding residential area.

Three hundred forty-four acres of regional park would be created under this alternative, compared with 172 acres of regional park under the Reuse Plan Alternative and the Medium Density Alternative. Approximately 2.45 million square feet of nonresidential space (excluding civic/recreation space) and 843 residential units would be in use on and off the island under this alternative. Transportation improvements described for the Medium Density Alternative would be included in this alternative. Under this alternative, the population of Mare Island would be approximately 2,703, including residents of Roosevelt Terrace; projected employment would be approximately 4,804 workers.

No Action Alternative

Inclusion of the No Action (caretaker) Alternative in the environmental analysis and documentation is required by the Council on Environmental Quality regulations, which implement NEPA. The No Action Alternative provides a benchmark against which Federal actions are evaluated. It also fulfills the requirement of CEQA that a "no project" alternative be evaluated.

For this EIS/EIR, the No Action Alternative would retain Mare Island in a caretaker or inactive status under Navy control, under the custody of the

Navy's Engineering Field Activity West. The No Action Alternative is defined as the installation being closed, as mandated by law, with on-site activity limited to those associated with caretaker status of surplus properties, such as landscape, structures, and utility maintenance; fire prevention and protection; security; and environmental restoration. Site contamination cleanup and limited interim leasing would be assumed to continue during the caretaker period.

Some interim leasing has occurred at Mare Island since the shipyard closed in April, 1996. A list of current tenants is provided in Appendix K. With the exception of 1 lease, which expires in the year 2010, all existing lease agreements expire by the end of year 2001.

Environmentally Preferable Alternative

NEPA requires that an environmentally preferable alternative be identified, and CEQA requires that an environmentally superior alternative be identified. The No Action Alternative is both the environmentally preferable alternative and the environmentally superior alternative. However, consistent with CEQA requirements, one of the reuse alternatives must further be identified as an environmentally superior alternative. Because its overall environmental impacts would be less than under the other reuse alternatives, the Open Space Alternative would be the CEQA environmentally superior alternative. The No Action Alternative would be the NEPA environmentally preferable alternative. The Open Space Alternative is described in Section 2.5, and the No Action Alternative is described in Section 2.6 of this document.

AFFECTED ENVIRONMENT

The EIS/EIR provides a description of the existing environmental and socioeconomic conditions at Mare Island and the off-island properties. The setting discussion for each resource area identifies the region of influence (ROI) applicable to the specific resource area. An ROI is a geographic area in which impacts for a particular resource would likely occur. The ROI area for a resource having regional impacts will be different from the ROI area for a resource with localized impacts. Existing conditions are described for the following resources: land use, socioeconomics, public services, cultural, aesthetics, biology, water, geology and soils, traffic and circulation, air quality, noise, utilities, and hazardous materials.

ENVIRONMENTAL CONSEQUENCES

The EIS/EIR evaluates potential environmental consequences associated with Navy disposal and community reuse of surplus property at the former

Mare Island Naval Shipyard. These impacts have been separated into those that would result from Navy disposal and the No Action Alternative and those that would result from implementing community reuse alternatives. For every resource area evaluated in the EIS/EIR, reuse impacts are projected to 2020. Complete implementation of each reuse alternative is assumed in determining impacts.

For the purposes of Navy NEPA analysis, direct environmental consequences or impacts are those associated with Navy disposal of surplus property and the No Action Alternative, and indirect impacts are associated with community reuse of Navy surplus property. The Navy's roles and responsibilities for disclosing indirect reuse-related environmental impacts is to address reasonably foreseeable impacts. However, property reuse will occur after it is conveyed from Federal ownership and in support of local reuse actions. Implementing mitigation measures for reuse environmental impacts is a responsibility of the acquiring entity and not the responsibility of the Navy.

Since publication of the Draft EIS/EIR, the Navy and Vallejo have worked closely with affected Federal and state resource agencies to identify mechanisms to protect sensitive biological and cultural resources on Mare Island. These formal agency consultations were completed in 1997 with issuance of a Biological Opinion by the USFWS and the signing of a Memorandum of Agreement (MOA) regarding cultural resources at Mare Island. The conditions contained in these 2 documents have been incorporated into the EIS/EIR reuse alternatives, thereby reducing previously identified significant impacts to a nonsignificant level.

Table ES-2 summarizes the overall significant impacts to environmental resources for the Navy action and reuse alternatives, followed by a summary of the environmental consequences associated with each resource area. The table reflects the greatest degree of impact for each resource category by alternative. The summaries that follow detail the significant and nonsignificant impacts for each resource category, as well as areas of beneficial impacts or no impact.

Land Use. No direct land use impact would occur through disposal of Federal surplus property at Mare Island because it would not result in physical changes to the landscape. No significant land use impacts would be generated under the No Action Alternative because there would be minimal use of property and facilities. Beneficial land use impacts under all reuse alternatives would result from the increased recreation and open space opportunities, preservation of the southern hill area as a regional park, and decreased development accompanied by additional landscaping at Roosevelt Terrace.

Table ES-2
Summary of Impacts and Significance

Impact Issues	Navy Action		Community Reuse Alternatives		
	Navy Disposal	No Action Alternative	Reuse Plan Alternative	Medium Density Alternative	Open Space Alternative
Land Use	○	○	●	◑	◐
Socioeconomics	○	○	◑	◑	◑
Public Services	○	◐	◑	◑	◑
Cultural Resources	◐	◐	◐	◐	◐
Aesthetics and Scenic Resources	○	◐	●	◑	◑
Biological Resources	◐	◐	◑	◑	◑
Water Resources	○	◐	◑	◑	◑
Geology and Soils	○	◐	◑	◑	◑
Traffic and Circulation	○	◐	◑	◑	◑
Air Quality	○	◐	◑	◑	◑
Noise	○	◐	◑	◑	◑
Utilities	○	○	◑	◐	◐
Hazardous Materials and Waste	○	◐	◐	◐	◐

LEGEND:

Level of Impact

● = Significant and not mitigable
◑ = Significant and mitigable
◐ = Nonsignificant
○ = No impact

No significant impact would occur under any of the reuse alternatives from introducing new businesses on Mare Island and using the Main Entrance for retail or commercial purposes because reuses would be compatible with existing and surrounding land uses.

A significant and mitigable impact under the Reuse Plan Alternative and the Medium Density Alternative would be the impact of redevelopment to existing dredge slurry lines. Significant and mitigable impacts of the Reuse Plan Alternative include relocating the rifle range to the south end of the island, which would not be compatible with the proposed regional park and adjacent wetlands; developing retail/residential projects in Reuse Area 10, which would not be compatible with the regional park; and constructing the southern crossing bridge, which would not be compatible with the residential and regional park uses. A significant and mitigable impact of the Medium Density Alternative would be retaining the rifle range at its current location, because of its incompatibility with surrounding residential uses.

A significant and not mitigable land use impact under the Reuse Plan Alternative would be the construction of the southern crossing bridge in Vallejo. This proposed bridge could be incompatible with surrounding residential and commercial land uses and could divide the existing physical arrangement of the community.

Socioeconomics. No direct impact to local or regional employment, income, population, housing or schools would occur through disposal of Federal surplus property at Mare Island. No significant impact to local or regional employment or income, population and housing, schools (K-12), or recreation would occur under the No Action Alternative. Beneficial impacts under all reuse alternatives would be the increased employment, income, and recreational opportunities provided through implementation of the reuse plan. Population and housing in the Vallejo area would increase under all reuse alternatives.

A significant and mitigable impact to schools under all of the reuse alternatives would be the overcrowding at Federal Terrace School from the increases in students generated by the reuse of Roosevelt Terrace. A significant and mitigable impact under the Reuse Plan Alternative and the Medium Density Alternative would be the overcrowding of Mare Island Elementary School from the increased students generated by residential reuse at Mare Island.

Public Services. No direct impact to public services would occur through disposal of Federal surplus property at Mare Island. No significant impacts to public services would occur under the No Action Alternative because of the minimal demand for police, fire, and emergency medical services that would be generated. Services would be provided by Vallejo, contractors, or the Navy.

No significant impacts to medical services would occur under any of the reuse alternatives because the demand could be met by existing and projected capacity at area medical centers. A significant and mitigable impact to Vallejo police, fire, and emergency medical services would occur under all reuse alternatives because demand for these services would exceed existing capabilities and would require support by Vallejo staff.

Cultural Resources. The Mare Island Historic District is listed on the National Register of Historic Places. As required by Section 106 of the National Historic Preservation Act (NHPA), and its implementing regulations, the Navy consulted with the State Historic Preservation Office (SHPO), the Advisory Council on Historic Preservation (ACHP), the National Park Service (NPS), and Vallejo to identify ways to avoid or

mitigate any adverse effects to historic properties, resulting in the execution of a MOA in May 1997.

Disposal of Federal surplus property at Mare Island could result in adverse effects through transfer, lease, or sale of the property without adequate provisions to protect the property's historic integrity. This potential adverse effect is addressed by the Navy in the MOA and therefore is nonsignificant. MOA measures include curating artifacts, transferring important records and historic artifacts to the National Historical Center in Washington DC, implementing appropriate layaway standards, recording the most representative historic buildings, and enforcing maintenance standards during predisposal leasing.

Under the No Action Alternative, adverse effects to cultural resources could result from layaway of historic buildings, resulting in deterioration or destruction, and from lease of historic buildings to non-Navy entities, resulting in lease of property without adequate provisions to protect the property's historic integrity. This potential adverse effect is addressed in the MOA and therefore is nonsignificant. The Navy will follow procedures designed to minimize damage to historic properties, including enforcing standards on lessees.

Adverse effects to historic properties could occur under each reuse alternative through reuse and rehabilitation of structures, demolition, construction of buildings, and construction activities next to archeological sites. These potential adverse effects are addressed by the Navy and Vallejo in the MOA and therefore are nonsignificant. Pursuant to the MOA, Vallejo will add a selected number of buildings, structures, and landscaped areas to the jurisdiction of its historic preservation ordinance as title is transferred. Any action affecting the designated buildings would be subject to requirements of this ordinance. Vallejo also will comply with the requirements of CEQA regarding the protection of historic and prehistoric archeological resources. In addition, the MOA specifies that the Navy and the National Park Service will develop a program for recording a representative sample of buildings, structures, and landscapes within the historic district to the standards of the Historic American Engineering Record and the Historic American Buildings Survey (HABS/HAER), to ensure a permanent record of these properties.

Aesthetics and Scenic Resources. No direct impacts to aesthetic resources would occur through disposal of Federal surplus property at Mare Island. No significant impact to aesthetic resources would occur as a result of building deterioration and landscape alteration under the No Action Alternative. A beneficial visual impact under all reuse alternatives would be the increase in landscaping at Roosevelt Terrace.

No significant impact would result from commercial and industrial redevelopment and the moderate expansion of existing housing and campus areas, proposed under all reuse alternatives, because existing scale and density would be maintained. No significant impact would result from reuse of the Main Entrance for retail or commercial purposes, proposed under all reuse alternatives, because the character of the area would be maintained. No significant impact would result from expansion of the golf course, proposed under the Reuse Plan Alternative and Medium Density Alternative, because the existing open space visual character would be maintained.

Significant and mitigable visual impacts under all reuse alternatives would result from walking, cycling, and equestrian trails in the southern undeveloped area because of their visibility from sensitive scenic viewpoints. A significant and mitigable visual impact under the Reuse Plan Alternative would be relocating the rifle range to an upland open space area because of its visibility from sensitive view points.

A significant and not mitigable visual impact under the Reuse Plan Alternative would result from constructing the southern crossing bridge. The bridge would be prominently visible from viewpoints with high viewer sensitivity and would substantially alter views of the area from the surrounding waterfront and hillsides.

Biological Resources. No direct impacts to biological resources would occur through disposal of Federal surplus property at Mare Island. Conservation easements will be established prior to disposal on surplus land to protect endangered species habitat and wetlands and to ensure preservation and management of these lands regardless of future changes in land ownership. No significant impacts to biological resources would occur under the No Action Alternative. Neither construction nor residents and their pets would be introduced on the island to affect wetlands. The USFWS has issued a Biological Opinion, following Section 7 consultation, under the Endangered Species Act of 1973, as amended, 16 U.S.C. §1531 *et seq.*, that establishes specific protections for endangered and threatened species at Mare Island. This protection will be implemented by the Navy during the caretaker period and by Vallejo after property transfer.

No significant impacts to marsh gumplant would occur under any of the reuse alternatives because this species would be protected by conservation easements. No significant impacts to sensitive fish from use of the dry docks and other in-water activities would occur under any of the reuse alternatives because surveys indicate these species occur only occasionally near Mare Island. No significant impacts to coast live oak or northern coastal scrub communities would occur under any of the reuse alternatives because these communities are not listed as sensitive.

There would be no significant impacts from residents and domestic or feral animals trampling, harassing, or killing the endangered salt marsh harvest mouse and clapper rail under any of the reuse alternatives. In accordance with the Biological Opinion, a predator management plan and a public access plan have been added to the project description to address these impacts.

Significant and mitigable impacts to biological resources, including Mason's lilaeopsis, would occur from constructing the southern crossing bridge in Reuse Area 10 because it would be located in the conservation easement area that contains endangered species habitat and wetlands.

Water Resources. No direct impact to water resources would occur from disposal of Federal surplus property at Mare Island. No significant impact to water resources would occur under the No Action Alternative because there would be no development of the island and no dredging would be conducted. No impacts would occur under any of the reuse alternatives related to increase in runoff from Roosevelt Terrace, alteration to ground water quality, or increase in the use of ground water.

No significant impacts would result from accidental emissions of pollutants during construction and operations under any of the reuse alternatives because they would be controlled by the required Storm Water Pollution Prevention Program (SWPP). No significant impacts would result from contaminated water discharges under any of the reuse alternatives because discharges would be eliminated by the planned improvements to the system.

Significant and mitigable impacts under all reuse alternatives include the potential for increased erosion/sedimentation during construction and demolition, exposure of residents to flood hazards, and exposure of contaminated sediments to organisms in the food chain through berthfront dredging.

Geology and Soils. No direct impact to geologic resources would occur through disposal of Federal surplus property at Mare Island. No significant impact to geologic resources would occur under the No Action Alternative because there would be no construction and few people would be on the island to be exposed to geologic hazards.

Significant and mitigable impacts under all the reuse alternatives would result from damage due to ground shaking from a large earthquake. Implementing the reuse alternatives would bring new residents and workers to the island who would be subject to earthquake related hazards, such as groundshaking, landslides, and liquefaction. An earthquake could cause significant damage to buildings, dams, and levees. Buildings could be

severely damaged during a large earthquake. Dam and levees could fail, causing substantial flooding; unstable slopes also could fail. The levees, areas outside the historic shoreline, and portions of the regional park and golf course would be particularly susceptible to earthquake-related impacts.

Traffic and Circulation. No direct impact to regional and local traffic would occur through disposal of Federal surplus property at Mare Island. No significant impacts to regional or local traffic would occur under the No Action Alternative because of the few traffic trips that would be generated. A beneficial traffic impact would result from constructing the southern crossing bridge, proposed under the Reuse Plan Alternative, because it would improve traffic flow, reducing on-island congestion.

No significant impacts to off-island regional traffic would occur under any of the reuse alternatives because traffic volumes would be less than under preclosure shipyard conditions. No significant impacts to on-island traffic would occur under any of the reuse alternatives because traffic volumes to the local access roadways would not exceed capacities of these roadways. Reuse would incorporate substantial improvements to the on-island circulation system.

Significant and mitigable on-island traffic impacts under all reuse alternatives would result from truck and rail freight traffic and short-term construction activities occurring in areas with insufficient sightlines and turning radii. Mitigation measures include modifying certain roadways and delivery areas, to increase sightlines and turning radii, and monitoring construction traffic so that, if necessary, it could be scheduled during the off-peak traffic periods.

Air Quality. No direct impact to air quality would occur through disposal of Federal surplus property at Mare Island. Property disposal actions are exempt from Clean Air Act, 42 U.S.C. §7401 *et seq.*, conformity determination requirements. No significant impacts to air quality would occur under the No Action Alternative because of the minimal demolition and maintenance activities and low traffic volumes that would be generated.

Significant and mitigable short-term impacts to air quality under all reuse alternatives would result from the fugitive dust generated by construction and demolition activities. A significant and mitigable impact under the Reuse Plan Alternative would be the fugitive dust generated during construction of the southern crossing bridge.

Significant and mitigable long-term air quality impacts under all of the reuse alternatives would result from traffic associated with land use development on Mare Island. Railroad Boulevard and Cedar Avenue would be most affected by traffic and the resulting air quality impacts. Traffic associated

with reuse would not violate carbon monoxide standards or produce ozone precursor emissions in excess of the BAAQMD impact significance threshold.

Noise. No direct noise impacts would occur through disposal of Federal surplus property at Mare Island. No significant noise impacts would occur under the No Action Alternative because of the minimal demolition and maintenance activities and low traffic volumes generated. No significant noise impacts at the off-island properties would be generated by any of the reuse alternatives.

Significant and mitigable noise impacts occurring under each reuse alternative would be generated by construction activities, traffic and the rifle range. Construction noise would be a temporary impact mitigated by phasing construction projects in populated areas and by limiting work to daytime hours. Traffic under the Reuse Plan Alternative would generate high noise levels south of 8th Street, largely because of the southern crossing bridge traffic. Roadway designs and traffic controls would reduce traffic noise impacts at Farragut Village. Relocation or continued use of the rifle range would create noise levels incompatible with surrounding land uses. Removal of the rifle range from Mare Island would mitigate this impact.

Significant and mitigable noise impacts would occur under the Reuse Plan Alternative from constructing the southern crossing bridge. Noise levels would affect adjacent residential areas on Mare Island and Vallejo, depending on the location of the bridge and bridge access. The resulting noise levels could exceed noise element land use compatibility guidelines, depending on the locations of the bridge and types of property uses being affected by the increase in noise. Detailed noise analyses would be prepared as a part of the specific environmental documentation required when a design concept and specific location for the southern crossing have been identified.

Utilities. No direct impact to utilities would occur through disposal of Federal surplus property at Mare Island. No impact to utilities would occur under the No Action Alternative because caretaker activities would not increase demand for utilities.

No significant impact to water demand would occur under any of the reuse alternatives because improvements to the existing system would be made as part of the reuse activities. No significant impact to solid waste would result from the shift to more residential and commercial activities under reuse because there would be no significant change in the waste composition. No significant impact to electrical demand would occur under any of the reuse alternatives because increased electrical demand would be accommodated by system upgrades included in the reuse plan. Gas and electric service would

be provided by Island Energy, the new owner of the natural gas and electrical systems. No significant impact to the stormwater or water storage systems would occur under any of the reuse alternatives because the planned improvements to the stormwater and water storage systems would accommodate the increased runoff. No significant impact to utility services under any of the reuse alternatives would result from reuse of Roosevelt Terrace and the Main Entrance.

A significant and mitigable impact to the wastewater service system would be developing the Retail/Residential Area, under the Reuse Plan Alternative, because it would require extending utility service to the southern end of the island.

Hazardous Materials and Waste. No direct impact to hazardous materials and waste would occur through disposal of Federal surplus property at Mare Island. Properties would be remediated consistent with the protection of human heath and the environment, and property recipients will be notified of the levels of remediation achieved. No significant impacts would occur under the No Action Alternative because all programs related to hazardous materials and waste would proceed without disruption. The Navy would continue limited leasing of properties to various tenants that use hazardous materials and generate hazardous wastes. Management of these materials or waste would continue according to current regulations. The quantity of hazardous materials would be substantially less than under operational shipyard conditions. Small quantities of hazardous waste would continue to be generated and controlled by current regulations.

No significant impacts to hazardous materials would occur under any of the reuse alternatives. As reuse is implemented, hazardous waste management would be regulated under Federal Resource Conservation and Recovery Act (RCRA), 42 U.S.C. §6901 *et seq.*, hazardous waste management requirements and state health and safety code requirements. The impacts associated with relocating the rifle range to the proposed regional park, proposed under the Reuse Plan Alternative, would also be subject to RCRA requirements. Properties that contain or that potentially contain contamination may be transferred prior to completion of environmental remediation only if conditions listed in the amended Comprehensive Environmental Response Facilitation Act (CERCLA) regulations, 42 U.S.C. §9610 *et seq.*, are met.

OTHER CONSIDERATIONS

Chapter 5 discusses other topics required by NEPA and CEQA. These include identifying unavoidable adverse impacts, the relationship between short-term uses and long-term productivity, irreversible or irretrievable commitment of resources, and growth inducing and cumulative impacts.

Chapter 5 also addresses issues related to Environmental Justice and the Protection of Children from Environmental Health Risks.

Unavoidable Adverse Impacts of the Proposed Action

Disposal of the shipyard would not result in any significant unavoidable impacts. Constructing the southern crossing bridge, proposed under the Reuse Plan Alternative, could result in unavoidable significant impacts Vallejo land uses. Constructing the southern crossing would result in unavoidable significant impacts to sensitive visual resources.

Short-term Uses and Long-term Productivity

The productivity of Mare Island historically has been related to its operation as a naval shipyard and the resulting jobs, products, and services it provided. The reuse alternatives would make use of properties that could otherwise be left unused, improving both the short-term and long-term economic productivity of Vallejo over conditions that would occur with a closed, inactive facility. Additional long-term benefits include clean up of contaminated sites, provision of jobs, housing and recreational opportunities, and maintenance of open space, biological resources, and island infrastructure.

Irreversible and Irretrievable Commitment of Resources

Disposal would result in the loss of Navy facilities at Mare Island. To the extent that major investments are made in land uses that do not specifically depend on waterfront location, there could be a relative loss in Bay Area property available to water-dependent users from implementing the Reuse Plan Alternative. Implementing the Reuse Plan Alternative also would require significant commitments of resources for rehabilitating or demolishing existing structures and for constructing proposed facilities. Construction and demolition related to the reuse actions could result in the irretrievable loss of cultural resources.

Growth-inducing Impacts

Disposal of the shipyard would not directly induce growth in the region. The reuse alternatives would include growth through the creation of jobs and an increase in population and housing. Constructing the southern crossing could induce commercial growth near its eastern terminus in Vallejo.

Cumulative Impacts

The reuse action, in conjunction with other planned development projects in the region and the proposed uses on state reversionary land and Federal transfer properties at Mare Island, would result in cumulative impacts to several resources. Some of these impacts, such as expanding public open space areas and creating jobs and housing, would be beneficial. Potentially significant cumulative impacts identified in this document are related primarily to constructing the southern crossing bridge and its impacts on several resources and future uses of the dredge disposal areas on state reversionary land.

Environmental Justice

The Executive Order on Federal Actions to Address Environmental Justice in Minority and Low-income Populations (E.O. 12898) requires that the relative impacts of Federal actions on minority and low-income populations be addressed to avoid placing a disproportionate share of adverse impacts from these actions on these groups.

The ROI considered for environmental justice impacts included Solano and Napa counties. Reuse actions affecting the region and local neighborhoods were considered. The primary regional impact occurring from the reuse action would be the traffic traveling through Vallejo and onto the regional transportation network. Reuse plan actions occurring in Vallejo include reuse of Roosevelt Terrace, constructing the southern crossing, and reusing the railroad right-of-way. Neighborhoods adjacent to these reuse actions are composed of a high level of minority or low-income populations.

Regional traffic impacts from reuse would occur on I-80, an interstate transportation corridor passing through California, and State Route 29, a regional connector from Vallejo through Napa, County. I-80 and State Route 29 are bordered by many diverse communities with varying levels of minority and/or low-income populations. Because of the regional character of these transportation facilities, the range of communities that use these facilities and the small contribution of traffic generated by Mare Island to these corridors, traffic impacts were not considered to disproportionately affect minority and low-income populations.

Roosevelt Terrace

The Vallejo Heights neighborhood next to the Roosevelt Terrace Housing Complex has a high percentage (20 percent) of persons below the poverty level and a higher than citywide Black population (24 percent verses 21 percent). Roosevelt Terrace would be redeveloped for affordable housing

under the Reuse Plan. In general, the reuse of Roosevelt Terrace or of other property identified as surplus for affordable housing could benefit all members of the community by providing additional home ownership opportunities. This would not disproportionately adversely affect low-income or minority populations.

Southern Crossing

The environmental impact of constructing the southern crossing bridge from Mare Island to Vallejo in 2020 on low-income and minority populations would depend on the location of the bridge. Detailed environmental analyses, including opportunities for public involvement, will be required following identification of a specific location and development of detailed project plans. Coordination with various Federal, state, and local agencies will also be required to acquire the necessary permits and approvals.

Locating the southern crossing in commercial or industrial areas away from existing residential areas would avoid direct land use and noise impacts to these communities. Locating the southern crossing in existing residential neighborhoods could disproportionately impact the low-income and minority population in these neighborhoods.

Railroad Spur

Reuse of the railroad spur may increase train activity marginally over preclosure conditions, which would represent a continuation of safety concerns near the Vallejo Heights neighborhood elementary school and other residential neighborhoods adjacent to the rail corridor. The impacts from continued train activity would not disproportionately affect low-income or minority populations. To reduce the potential safety hazard, it is recommended that signs be posted adjacent to the right-of-way stating that it is private railroad property and that trespassing is prohibited.

Protection of Children from Environmental Health Risks and Safety Risks

Executive Order 13045, Protection of Children from Environmental Health Risks and Safety Risks, states that each Federal agency shall (1) make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children, and (2) ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks. Environmental health risks and safety risks mean risks to health or safety that are attributable to products or substances that the child is likely to come in contact with or ingest.

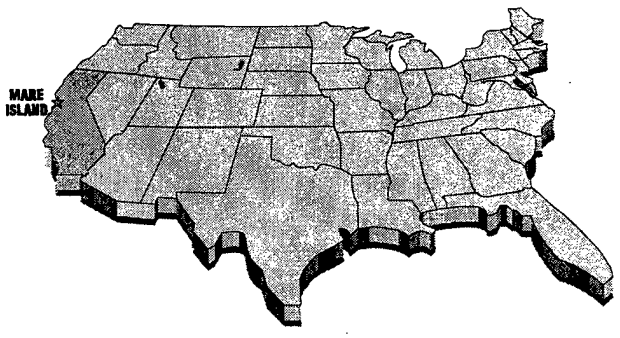
The potential for disproportionate health and safety impacts to children was evaluated at locations with probable high concentrations of children, such as schools, day care centers, recreation areas, and residential areas. Proposed locations of these areas in the reuse plan are indicated on Table 2-1, in Chapter 2 of this document. The ROI for this analysis included the former Mare Island Naval Shipyard property, including Roosevelt Terrace.

Disposal actions would not disproportionately affect children. Prior to real property conveyance, the Navy will remediate hazardous substances and investigate and remove contamination to a level consistent with the protection of human health and the environment. Future property recipients will be advised and notified of the levels of remediation achieved and where appropriate, covenants, conditions, or restrictions may be included in the deed to ensure protection of human health and the environment.

Under the No Action Alternative, activities at Mare Island would be limited to caretaker functions and interim leasing. Children would not be disproportionately exposed to health and safety risks by either of these activities. As shown in Appendix K current interim leases at Mare Island are comprised of primarily light industrial, commercial, and heavy industrial uses. Only 2 leases represent activities where children would be present: the elementary school and day care center. The school and day care center buildings were previously used for administrative or education purposes and are located away from industrial and commercial uses.

Under the reuse alternatives, the largest concentrations of children would be in the proposed residential, educational, and recreational areas of the island and at Roosevelt Terrace located off-island. Prior to property conveyance the Navy will remediate hazardous substances and investigate and remove contamination to a level consistent with the protection of human health and the environment. Roadway improvements proposed by the reuse plan would improve safety for all Mare Island residents from risks associated with automotive traffic. The EIS/EIR further recommends removal of the rifle range from Mare Island to mitigate heath and safety impacts associated with this proposed reuse. Other additional measures identified in the EIS/EIR mitigate health and safety concerns related to transportation (truck traffic), air quality (construction impacts), and noise (construction impacts). Implementation of these measures would further reduce potential health and safety risks to all persons living or working on Mare Island, including children.

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1.0 PURPOSE OF AND NEED FOR ACTION

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1. PURPOSE OF AND NEED FOR ACTION

This environmental impact statement/environmental impact report (EIS/EIR) evaluates the potential impacts to the environment that may result from the Navy disposal and community reuse of Federal surplus property at the former Mare Island Naval Shipyard in Vallejo, California. Mare Island Naval Shipyard closed on April 1, 1996, pursuant to the 1990 Defense Base Closure and Realignment Act, Pub. L. 101-510, Title XXIX, 10 U.S.C. §2687 note, commonly referred to as DBCRA 1990.

This document has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, 42 U.S.C. §4321 *et seq.*; the California Environmental Quality Act (CEQA) of 1970, Cal. Pub. Res. Code 21000 *et seq.* and implementing guidelines, the Council on Environmental Quality (CEQ) NEPA implementing regulations, 40 C.F.R. 1500 *et seq.*; Navy guidelines (OPNAVINST 5090.1B), and DBCRA 1990, as amended. The Federal action evaluated in this EIS/EIR is the disposal of Federal surplus land, while the local action evaluated is the proposed community reuse of surplus property at Mare Island.

1.1 PURPOSE AND NEED

The Department of Defense (DOD) has for the past several years been reducing its basing and staffing requirements to match current force structure plans. The identification of Mare Island Naval Shipyard for closure was a result of that process.

The Defense Authorization Acts for Fiscal Years 1992 through 1995 and DBCRA 1990 established a procedure to close and realign military bases. As part of that process, the Base Realignment and Closure (BRAC) Commission recommended that the Secretary of Defense "close Mare Island Naval Shipyard, Vallejo, California". The BRAC Commission recommendation was approved by President Clinton, and accepted by the 103rd Congress in October, 1993. As a result, Mare Island was closed on April 1, 1996. The decision to close Mare Island Naval Shipyard was exempted from NEPA by DBCRA 1990. Navy disposal of the property and potential reuse, however, were not exempted. Requirements of DBCRA 1990 and its amendments relating to the disposal of DOD property include the following:

- Compliance with NEPA and related laws;
- Environmental restoration of the property as soon as possible with funds made available for such restoration;

- Consideration of the local community's reuse plan as part of the proposed Federal action; and
- Compliance with specific Federal property disposal laws and regulations.

1.2 HISTORY AND LOCATION OF MARE ISLAND

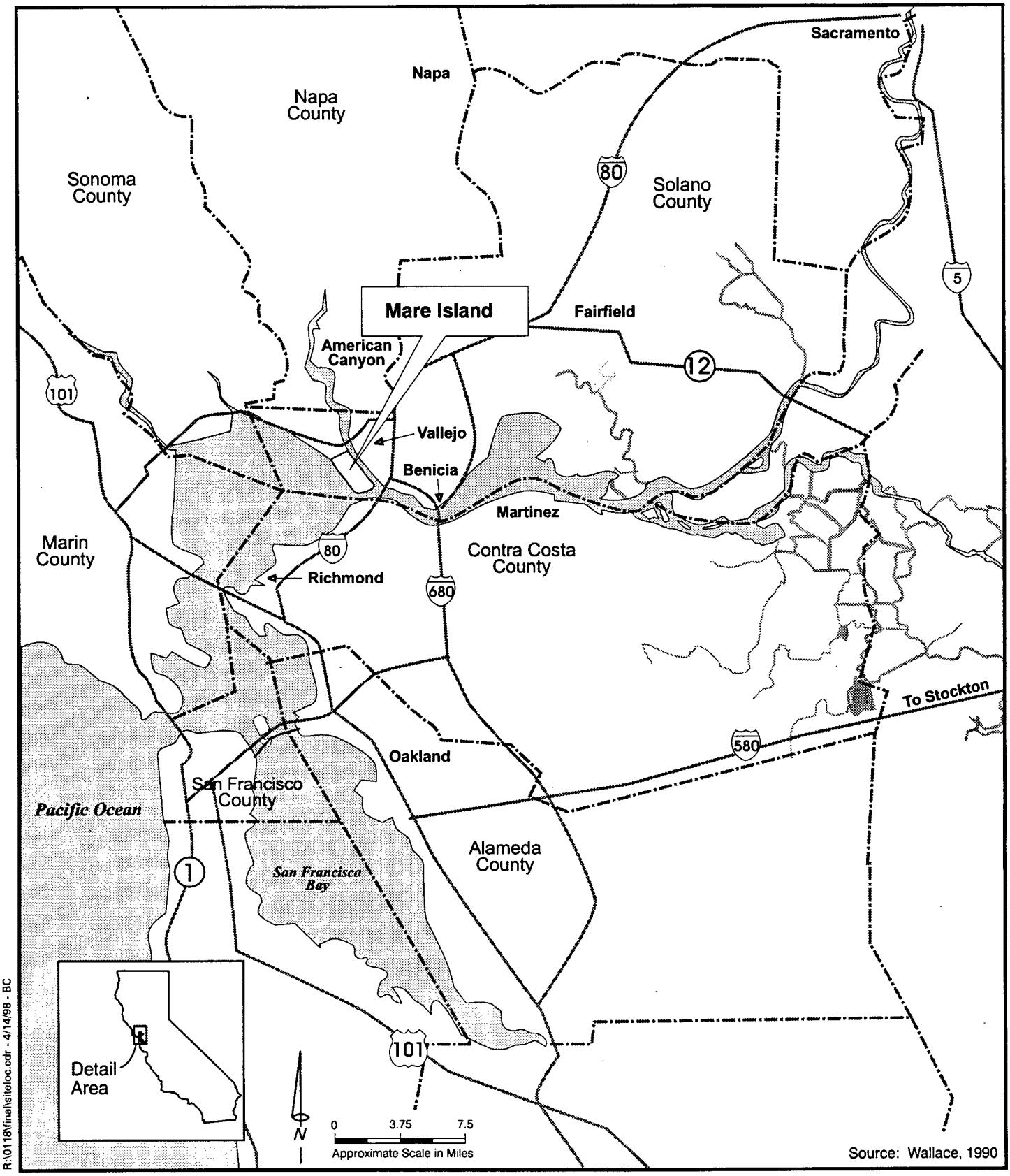
Mare Island Naval Shipyard began operations in 1854 when it was used to dock the Navy's Pacific Squadron. During World War II, Mare Island grew into one of the world's largest ship construction and repair facilities, employing up to 41,053 persons at its peak. In the 1950s, the Department of the Navy designated the shipyard as a building and overhaul yard for submarines; the shipyard operated in this capacity until the completion of all shipyard work in 1995, prior to operational closure in 1996.

Mare Island is located in Northern California on the western edge of Vallejo in southwestern Solano County. It is approximately 30 miles northeast of San Francisco in the North Bay subregion of the San Francisco Bay Area. Mare Island is close to the major Solano County communities of Benicia and Fairfield, the Napa County communities of American Canyon and Napa, and the Contra Costa County communities of Martinez and Richmond (Figures 1-1, 1-2).

Mare Island is bounded by Mare Island Strait (part of the Napa River) on the east, San Pablo Bay on the west, Carquinez Strait on the south, and the Napa Marsh and historic diked marshlands on the north (Figure 1-3). The entire site lies within the incorporated boundaries of Vallejo. Access to the site is from State Route (SR) 37, the primary route across the North Bay, and from the Mare Island Causeway via Tennessee Street, one of Vallejo's main arterials.

Mare Island is approximately 3.5 miles long by 1 mile wide. Historic calculations identified approximately 5,460 acres at Mare Island, which have been modified by more recent calculations to approximately 5,252 acres. This revised acreage primarily reflects a more accurate assessment of the amount of submerged land at Mare Island. The 5,252 acres of Mare Island Naval Shipyard property includes approximately 1,465 acres of dry land and approximately 3,787 acres of wetlands, dredge disposal areas, and submerged land. The island ranges in elevation from sea level to 284 feet above sea level at its southern end.

The eastern half of Mare Island is developed with approximately 960 buildings, totaling 10.5 million square feet. Building use included industrial, office, residential, educational, commercial, recreational, cultural, and institutional. The western half of the island is composed of wetlands and dredge disposal



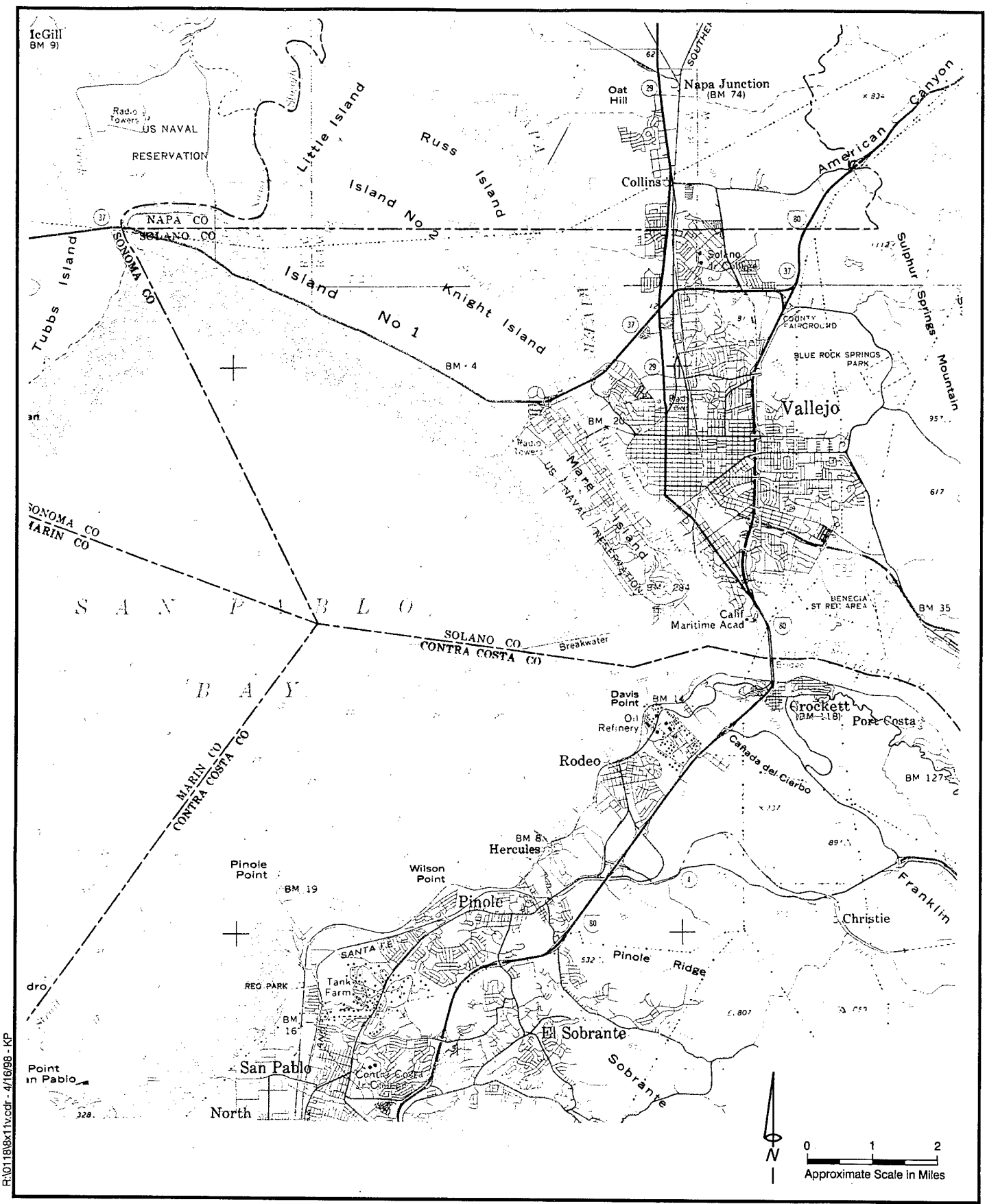
Mare Island is located in the northern part of the San Francisco Bay region.

Regional Site Location Map

Mare Island and
City of Vallejo, California

Source: Tetra Tech

Figure 1-1



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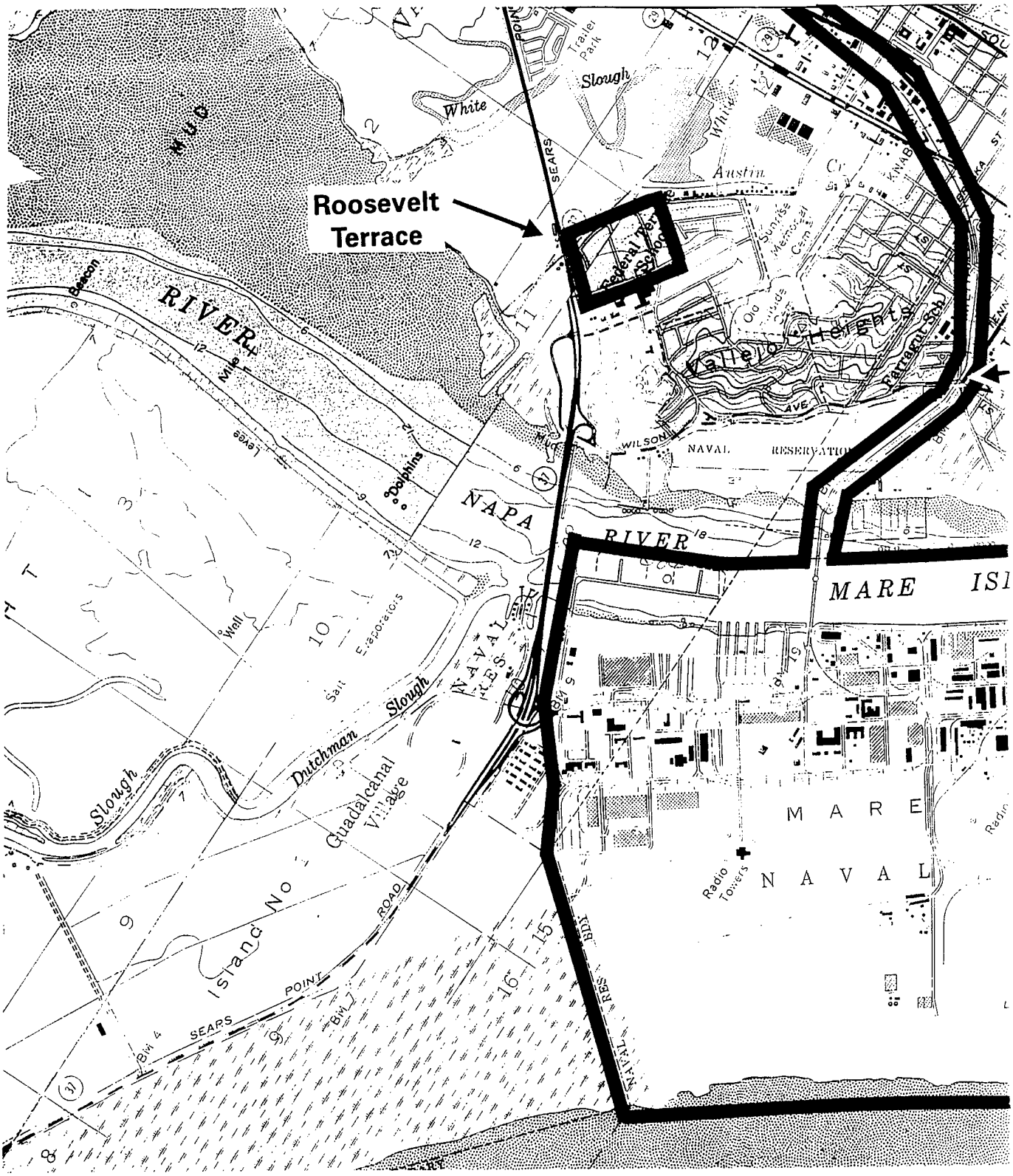
Mare Island is bounded by Mare Island Strait on the east, San Pablo Bay on the west, Carquinez Strait on the south, and the Napa Marsh and historic diked marshlands on the north.

Site Location

Mare Island, California

Source: USGS 1:125,000 series, San Francisco Bay Region, 1970

Figure 1-2



The former Mare Island Naval Shipyard Property encompassed the island, the causeway, the rail line through the City of Vallejo, and two off-site properties: the Main Entrance and the Roosevelt Terrace Housing Complex.

LEGEND:

Approximate

Source: USGS Quadrangle 7.5 minute series;
Benicia, CA; Mare Island, CA; Cuttings Wharf, CA

(1)

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(2)

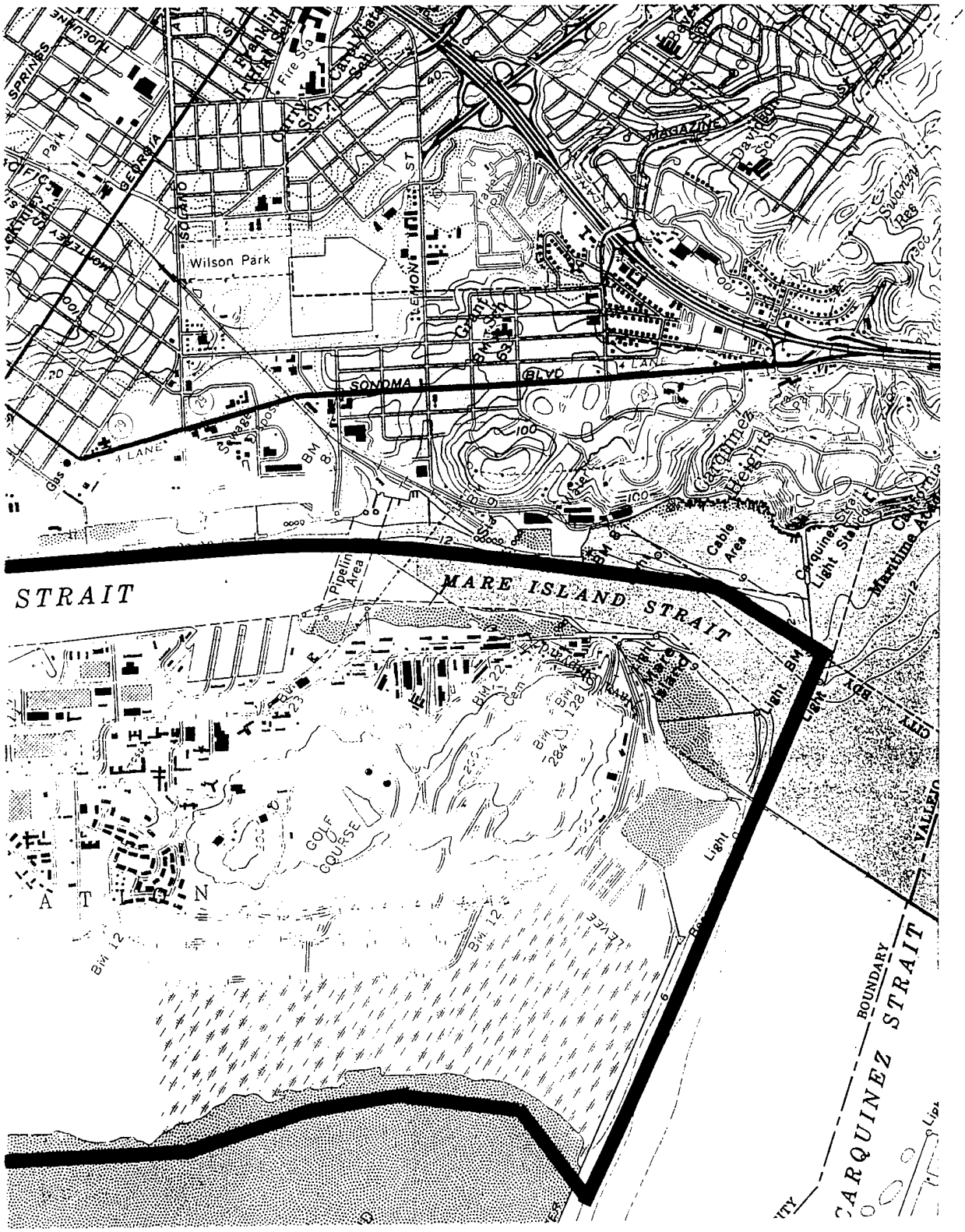
LEGEND:

Approximate Boundaries of Mare Island Naval Shipyard

N

0 1,000 2,000

Approximate Scale in Feet



0 1,000 2,000

Approximate Scale in Feet

Site Map

Mare Island, California

Figure 1-3

ponds. The shipyard property also includes the causeway from Mare Island across Mare Island Strait to Tennessee Street, the off-island Roosevelt Terrace housing complex on Sacramento Street, a small office complex at the Main Entrance, and a rail spur extending from the island through Vallejo.

1.3 DISPOSAL OF MARE ISLAND NAVAL SHIPYARD

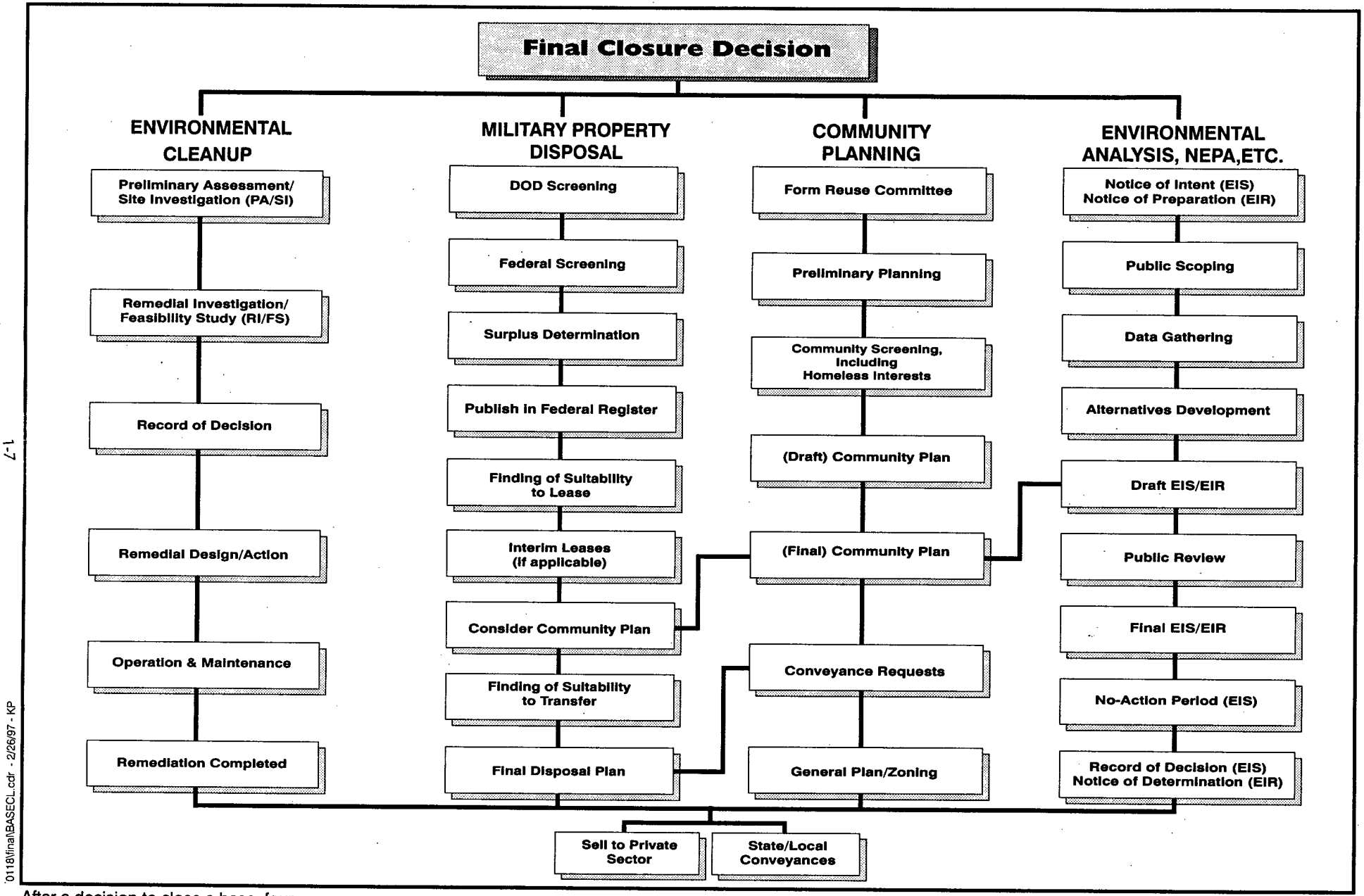
The disposal of Mare Island Naval Shipyard involves the reversion of some properties to state ownership, the transfer of excess Navy property to other Federal agencies, and the conveyance of surplus Federal property to non-Federal entities. The disposal of surplus land at Mare Island Naval Shipyard is the Federal action considered in this EIS/EIR. For purposes of Navy NEPA analysis, direct environmental consequences or impacts are those associated with Navy disposal of surplus Navy property and the No Action Alternative. Indirect impacts are associated with community reuse of surplus Navy property. Cumulative environmental impacts are associated with the reuse of reversionary Navy property, reuse of excess properties transferred to other Federal agencies, and other actions (Federal, state, and local) in the area of Mare Island.

The Navy's role and responsibility for disclosing indirect reuse-related environmental impacts is to address reasonably foreseeable impacts. Because reuse will occur after the property is conveyed from Federal ownership, implementation of mitigation measures for reuse environmental impacts is the responsibility of the acquiring entity and not the responsibility of the Navy. The Navy has no control over the future use of reversionary Navy property after reversion to the State of California, nor does the Navy have control over the future use of properties transferred to other Federal agencies.

The disposal process encompasses several sequential actions, as outlined in Figure 1-4. The Federal government is responsible for environmental cleanup and disposal of the property, while the local community is responsible for preparing and implementing a reuse plan for the property. The following narrative describes the actions associated with disposal of the shipyard.

1.3.1 Predisposal Actions

Predisposal actions at Mare Island include caretaker activities, interim leasing and environmental cleanup. Caretaker activities and interim leasing activities are described in Chapter 2, in the description of the No Action Alternative. Environmental cleanup activities are discussed in Sections 3.13. and 4.13 of this document.



1-7

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After a decision to close a base, four concurrent processes take place prior to property transfer.

Elements of Military Base Closure & Disposal Process

Mare Island, California

Source: Tetra Tech

Figure 1-4

1.3.2 Disposal Process

The disposal process for the shipyard is regulated by the DBCRA 1990, as amended; the Federal Property and Administrative Services Act of 1949, as amended, 40 U.S.C. §471 *et seq.*; the Surplus Property Act of 1944, 50 U.S.C. App. 1622 (g); and other authorizing statutes, as implemented in the Federal Property Management Regulations (FPMR), 41 C.F.R Chapter 101. The Base Closure Community Assistance Act of 1993, Pub. L. 103-160, Title XXIX, and the Base Closure Community Development and Homeless Assistance Act of 1994, Pub. L. 103-421, primarily amend BRAC statutes, but also contain self-standing provisions and amendments to other legal authorities for base closure and reuse, such as the direction for the establishment of a local redevelopment authority (LRA) responsible for base reuse planning, contained within the Redevelopment Act. The Navy also must comply with amendments to BRAC contained in the 1994 Defense Authorization Act and other laws and regulations, including Title 10 of the US Code and Navy regulations, affecting the disposition of real property.

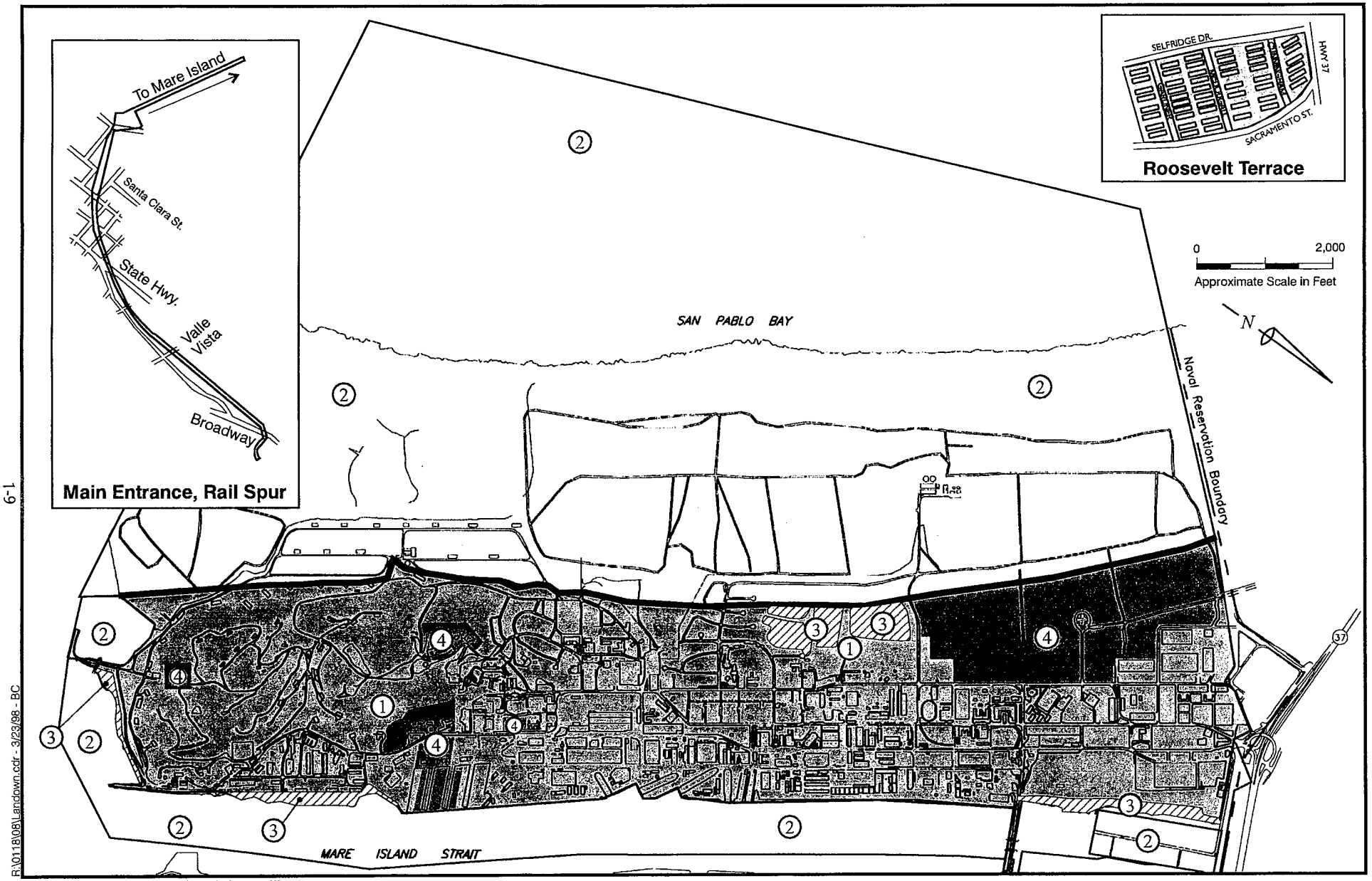
Reversionary Land Not Subject to Disposal

Mare Island contains tidal and submerged lands that were granted to the United States by California for developing Mare Island Naval Shipyard. The title to this land was ceded to the Federal government by the State of California in 3 grants in 1854, 1897, and 1963. Each grant contains a reversionary clause that these lands would revert to the state when they were no longer needed for United States military purposes. This property, which comprises approximately 3,629 acres, is not included in the property screening and disposal process described below. Figure 1-5 illustrates the parameters of the reversionary land as determined by the Navy (Hamblin 1994).

Property Screening Process

DOD and Federal Agency Screening. The screening process calls for first making the property available to DOD and other Federal agencies. The Navy has completed the DOD and Federal screening process for Mare Island. Eleven Federal agencies initially expressed interest in excess property at the shipyard. Only 4 of the agencies ultimately submitted formal requests for property transfer to the Navy—the USCG, USFS, USFWS, and US Army. The property subject to transfer to these agencies is located in various areas on Mare Island as shown in Figure 1-5 and summarized in Table 1-1.

The USCG requested an approximately 1-acre site in Reuse Area 12 to maintain a communication tower. They also would use 2 other small communications sites at the southern end of the island, by permanent



6-1

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Mare Island includes land that will revert to the state upon disposal, surplus land, land being transferred to other Federal agencies, and conservation easements.

LEGEND:

- (1) Surplus Land
- (2) State Reversionary Land
- (3) Conservation Easements
- (4) Land subject to transfer to other Federal agencies

Source: US Navy

Land Ownership

Mare Island, California

Figure 1-5

Table 1-1
Disposition of Land at Mare Island Naval Shipyard

Method of Disposition	Recipient	Acreage	Proposed Reuse
Federal Agency Transfer[1]	US Army	36	Army Reserve Center
	US Coast Guard	1	Communication Tower
	US Fish & Wildlife Service	162	Wildlife Refuge/Interpretive Center
	US Forest Service	8	Regional Office
Reversionary Conveyance	State of California	3,629	Tidelands and Submerged Lands
Disposal of Surplus Property[2]	LRA/Non-Federal	1,416	Development as described in Mare Island Final Reuse Plan
Total		5,252	

Source: US Navy 1997

[1]Numbers have been rounded to next highest acre

[2]This area includes approximately 81 acres covered by conservation easements.

easements. The USFS requested an approximately 8-acre site in Reuse Area 9 that includes Building 1324 and associated facilities for use as an office. The USFWS requested transfer of approximately 162 acres that includes wetlands, dredge disposal areas, and Building 505 to establish an interpretive center and extend the San Pablo Bay National Wildlife Refuge. The US Army requested an approximately 36-acre site located in Reuse Areas 5, 9, and 10. Precise acreages will be determined by legal description prior to transfer. At its March 10, 1998 meeting, the Vallejo City Council modified the Final Reuse Plan to reflect the transfer of portions of Reuse Areas 5, 9, and 10 to the US Army.

Homeless Assistance Screening. The Stewart B. McKinney Homeless Assistance Act, 42 U.S.C. §11301 *et seq.*, requires DOD and other Federal agencies to give priority consideration for homeless assistance over other uses for property considered excess, surplus, or underutilized by Federal agencies. The US Department of Housing and Urban Development (HUD) screens properties in these categories for suitability for homeless assistance. The Base Closure Community Redevelopment and Homeless Assistance Act of 1994 (Redevelopment Act), Pub. L. 103-421, established alternative procedures for providing homeless assistance during military base closures. It requires that the needs of the homeless be considered during the community's reuse planning process and be balanced with the need for other economic development. Vallejo elected to proceed under the alternative procedures.

The City of Vallejo, the Mare Island LRA, has completed screening for homeless assistance needs. It began its outreach efforts in June 1995 with advertisements in the Vallejo Times Herald for the submission of Notices of

Interest. Three responses were received and based on the information contained in the submittals and subsequent discussions with these and other organizations, the LRA recommended for approval the proposal from the Christian Help Center/Lord's Fellowship Center, a homeless assistance provider. Vallejo subsequently negotiated an agreement with the Lord's Fellowship to provide Buildings 733 and 737 on Mare Island for use in providing training and education services to the local homeless population. HUD approved the plan on July 15, 1996.

Surplus Property Determination. Property not transferred to other Federal agencies or acquired under the Redevelopment Act procedures is surplus to the needs of the Federal Government and will be available for conveyance to the LRA, other state and local entities, or private parties by a variety of conveyance mechanisms.

1.4 USE OF AN INTEGRATED DOCUMENT

Both NEPA and CEQA encourage use of an integrated EIS/EIR. CEQA and its guidelines have numerous provisions allowing state and local agencies to use an EIS as a substitute for an EIR. These provisions were reinforced in 1994 by the adoption of California legislation, Cal. Pub. Res. Code §21083.8.1, that specifically authorizes a lead agency to use an EIS as the EIR for a Federal base reuse plan, provided public involvement is at least as substantial as that required by CEQA.

Contents of an EIS under NEPA and an EIR under CEQA are similar, and they generally parallel one another. But NEPA and CEQA differ in their level of description and evaluation of alternatives; NEPA requires a consistent level of detail for a proposed action and each alternative, while CEQA allows a less detailed description and analysis of alternatives. NEPA requires identification of an environmentally preferable alternative. CEQA requires identification of an environmentally superior alternative and also contains mitigation monitoring requirements not included under NEPA. Under CEQA, socioeconomic impacts typically are not considered potentially significant unless they result in a secondary physical impact, while these impacts may be considered significant under NEPA.

Decisions regarding which base to close, relocate, or realign were exempted by Congress from NEPA documentation requirements by DBCRA 1990, Pub. L. 101-510 §2905(c). However, under NEPA, the Navy must consider the environmental effects of reasonable alternatives for the disposal and reuse of surplus property at closing bases. Vallejo is required by CEQA to evaluate the environmental effects of implementing a reuse plan.

1.4.1 Document Purpose

This integrated EIS/EIR has been prepared to fulfill requirements of NEPA and CEQA and to assess the potential environmental impacts of shipyard conveyance (also called disposal) and reuse. This document assesses the environmental impacts of disposal of Navy surplus land at the shipyard and, at a general "program" level, implementation of the proposed Mare Island Reuse Plan (also called the Reuse Plan Alternative) or alternatives to that plan. The reuse plan encompasses surplus land, state reversionary land, and land subject to Federal agency transfer.

The EIS/EIR is intended to provide decision-makers, responsible agencies, and the public with adequate information on potentially significant environmental impacts so they may make informed choices about Navy disposal options and community reuse alternatives. It does not provide information on development options more detailed than the ones presented in the community reuse plan. Such options will receive detailed environmental analyses under CEQA when detailed development plans are presented to Vallejo for consideration (see Section 1.5.1, Related NEPA/CEQA Documentation).

1.4.2 Uses of the EIS/EIR

The Navy will use the EIS in making disposal decisions for Federal surplus land. These decisions will be described in its Record of Decision (ROD). Following property disposal, no additional NEPA review by the Navy is anticipated.

Vallejo will certify and use the EIS/EIR in its consideration of any necessary amendments to its General Plan, in adoption of a specific plan and/or planned development master plan, and in zoning of the island resulting from the reuse plan. Should any approvals by Vallejo include significant unavoidable environmental impacts, the city would adopt findings, as required by CEQA.

This EIS/EIR also serves as the required CEQA documentation for the designation of Mare Island as a Local Agency Military Base Recovery Area (LAMBRA) under the state's Local Military Base Recovery Area Act, Cal. Gov. Code §7105 *et seq.* The purpose of that act is to stimulate business and industrial growth in areas experiencing military base closures by relaxing regulatory controls and providing tax credits and other economic incentives to private sector investors within a LAMBRA. The act permits local jurisdictions to apply for LAMBRA status for a base, provided it is not already within a state-designated enterprise zone. The California Trade and Commerce Agency is authorized by the act to designate 1 LAMBRA in each of 5 regions in the state.

1.4.3 Document Organization

This Final EIS/EIR consists of 2 volumes—Volume 1 contains the main body of the EIS/EIR and Response to Comments on the Draft EIS/EIR. Volume 2 includes photographs of Mare Island, public scoping materials and agency correspondence. Technical data supporting the EIS/EIR are also provided in Volume 2, Appendices D through K, as well as the Memorandum of Agreement regarding historic properties at Mare Island (Appendix D) and the Biological Opinion of the USFWS (Appendix F). Document organization is outlined below. Note that the appendices have been reordered since publication of the DEIS/EIR in order to include the Response to Comments in Volume 1.

Chapter 1, Purpose of and Need for Action, is a NEPA-required discussion intended to provide the reader with an overview of the reasons for disposal and reuse of the shipyard. It includes a description of the EIS/EIR content and approach, a description of the decision process for closing the shipyard, a description of the disposal process, and a description of the public involvement process used to solicit input on the potentially significant environmental impacts.

Chapter 2, Alternatives, Including the Proposed Action, provides the reader with a description of the proposed action (disposal of shipyard surplus property and community reuse, as proposed by the reuse plan) and alternatives to that action. Alternatives to the proposed action include the Medium Density Alternative, the Open Space Alternative, and the No Action Alternative. The chapter also provides a summary of the community planning process leading to the development of the preferred alternative (the Reuse Plan Alternative) and a table that summarizes the significant impacts and mitigations identified in the document.

Chapter 3, Affected Environment, describes the existing environmental conditions at Mare Island and the off-island properties. A region of influence (ROI) for each resource is identified that reflects the geographic area in which impacts for a particular resource are likely to occur.

Chapter 4, Environmental Consequences, describes the potential environmental impacts of the disposal and reuse of Federal surplus property at Mare Island. Each section identifies the criteria used to evaluate whether an impact would be considered significant. For every resource area evaluated in the EIS/EIR, impacts of disposal and each reuse alternative are projected to the year 2020. Impacts are described at a general level of detail, consistent with the level of detail in the reuse plan. The purpose of this chapter is to provide the public, interested agencies, and decision-makers with a clear understanding of the environmental effects of disposal and of adopting the preferred alternative

or any of the other reuse alternatives. This section also identifies mitigation measures intended to reduce or eliminate any identified significant environmental impacts.

Chapter 5, Other Considerations, addresses a number of topics required by NEPA and/or CEQA. These include identification of any unavoidable adverse impacts to the environment (NEPA/CEQA), any short-term uses and long-term productivity (NEPA/CEQA) identification of irreversible and irretrievable commitments of resources (NEPA/CEQA), an analysis of growth-inducing secondary population or development growth impacts (CEQA), cumulative impacts (NEPA/CEQA). Chapter 5 also addresses issues related to Environmental Justice and the Protection of Children from Environmental Health Risks and Safety Risks.

Chapters 6 through 9, provide background information, including consultations with interested and responsible agencies, the EIS/EIR distribution list, references, list of preparers, and index.

Chapter 10, Response to Comments, provides written responses to comments received from agencies and the public on the DEIS/EIR. The letters, and verbal comments received at the DEIS/EIR public hearing and responses are provided in this chapter.

Technical appendices and supplementary information are provided in Volume 2 of the FEIS/EIR.

1.5 RELATED STUDIES

The planning process for the reuse of Mare Island will occur over a period of 20 to 30 years. During this process, the Navy, Vallejo, or eventual property owners would be required to prepare additional environmental documents and planning studies for interim leases, environmental cleanup, and various reuse proposals. These related studies are discussed below.

1.5.1 Related NEPA/CEQA Documentation

No previous NEPA documentation has been prepared for the disposal and reuse of Mare Island. However, the Navy has prepared, and will continue to prepare, environmental documentation in support of limited interim leasing actions that will occur prior to disposal of the property or completion of this EIS/EIR and issuance of the ROD.

The Navy has the responsibility to prepare separate NEPA documentation (categorical exclusions) for the transfer of property to the USCG, USFS, USFWS and US Army. Cumulative impacts of the reuse of Mare Island

properties transferred to other Federal agencies are discussed in Chapter 5, Section 5.5.

Future specific reuse actions, including the proposed southern crossing bridge, will be subject to subsequent detailed environmental analyses under CEQA at the time that specific development plans are presented to Vallejo for consideration. These plans would include more detailed development criteria in the areas of public access, circulation and parking, open space and natural resources, recreational facilities, land use mix, and development design standards. The applicability of CEQA review and the level of analysis (i.e., Initial Study/Negative Declaration, Mitigated Negative Declaration, or EIR) would depend on the potential impacts of the specific proposed uses and the adequacy of this EIS/EIR in addressing those impacts. Vallejo already certified an EIR under CEQA in 1994 for roadway improvements on Wilson Avenue and Mare Island Way. The Wilson Avenue project realigns the Main Entrance area of Mare Island.

1.5.2 Environmental Restoration Studies

Environmental Baseline Survey (EBS). An EBS is a preliminary evaluation and summary of all known and suspected areas where hazardous materials or petroleum products have been handled, disposed of, or released within the boundaries of and adjacent to a property. DOD policy requires the preparation of an EBS prior to selling, leasing, or transferring real property. The EBS also is used to meet the requirements of the Community Environmental Response Facilitation Act (CERFA), 42 U.S.C.A. §9601 note (West 1995). The Final EBS for Mare Island Naval Shipyard was completed in December 1994 (US Navy 1994c) and documented the environmental conditions of real property at the shipyard and adjacent properties. Shipyard properties were classified into 1 of 7 BRAC types based on known storage, release, disposal, or migration of hazardous materials. Uncontaminated property (Type 1) also was identified in this process.

BRAC Cleanup Plan (BCP). The BCP for a closing base provides the status of ongoing environmental restoration and associated compliance programs. The BCP for Mare Island Naval Shipyard (US Navy 1994b) was completed on March 8, 1994, and most recently was revised on March 1, 1997. The BCP provides a thorough evaluation of the status of various cleanup programs and summarizes the compliance items that would require further evaluation and implementation. The document is scheduled to be updated annually or as necessary in response to the changing conditions and level of completion of these restoration programs until full restoration is complete. Environmental restoration and associated compliance programs will be used in conjunction with the Mare Island Reuse Plan to develop a strategy and prioritization for

restoration at Mare Island. Environmental cleanup documentation is summarized in Section 3.13.

1.5.3 Follow-on Planning Studies

Following completion of the EIS/EIR process, Vallejo will amend its General Plan to reflect the land use goals and designations in the reuse plan for Mare Island. It will then zone the island to be consistent with the General Plan and prepare a specific plan and/or planned development master plan to provide more detailed land use and design standards and provide implementation guidelines and procedures. Following adoption of the specific plan and/or master plan, planned development unit plans are expected to be developed for the following areas:

- North Light Industry (Area 1);
- Historic District (Area 4);
- Recreation, Open Space, and Natural Resources (island-wide);
- Waterfront (island-wide);
- Neighborhood Center (Area 2); and
- Industrial Areas (Area 5).

These plans would include more detailed development criteria in the areas of public access, circulation and parking, open space, cultural and natural resources, recreational facilities, land use mix, and development design standards. Depending on the content and level of detail of these area plans, they may require additional CEQA review.

Island improvements necessary to serve the proposed reuses have been identified in the reuse plan and should not require follow on planning studies beyond those conducted as part of the study area plans. Specific development plans may require additional CEQA analysis if substantial changes to the reuse plan's development assumptions are proposed.

1.6 PUBLIC INVOLVEMENT PROCESS

The EIS/EIR process is designed to involve the public in Federal and local decision-making. Public opportunities to comment on and participate in the process were provided during the preparation of this EIS/EIR, as outlined in the following sections. Comments from agencies and the public have been solicited throughout the process to help identify the primary issues associated with the shipyard's disposal and proposed reuse. The public notification process included the full spectrum of area residents and community organizations. Appendix B provides copies of public involvement materials, including a list of organizations responding to the scoping letter and a summary of the public meeting.

Methods to involve the public in the EIS/EIR process have included the following:

- Conducting a public scoping meeting to solicit comments and to identify issues of concern;
- Conducting a public meeting to receive comments on the Draft EIS/EIR and to provide the required 45-day public comment period;
- Publishing public notices of hearings, mailing public announcements, and coordinating media coverage, press releases, and feature articles;
- Publishing national public notices in the Federal Register; and
- Creating and updating an extensive mailing list to disseminate information.

A goal for public involvement, as required under the Executive Order on Federal Actions to Address Environmental Justice in Minority and Low Income Populations (E.O. 12898), has been to include affected low-income and minority populations in the public participation process. To achieve this, the following specific actions were implemented:

- Conducted televised public meetings at the Vallejo city offices in downtown Vallejo with easy access by car or public transit;
- Notified and requested comments from a range of neighborhood associations and minority organizations that may be affected by or interested in the proposed action; and
- Announced the public meetings in newspapers with a wide circulation and encouraged written comments for those unable to attend the meetings.

1.6.1 Scoping Process

The purpose of scoping is to identify issues and concerns regarding the proposed action for consideration in the environmental document. The scoping process for the Mare Island Naval Shipyard Disposal and Reuse EIS/EIR included notification via the Federal Register, newspaper ads, a public meeting, and direct mail. Vallejo, the Navy, and the consulting team considered comments received during the scoping process to determine the issues to be evaluated in the EIS/EIR. The main issues identified during the scoping process were impacts to biological resources, use of the dredge disposal areas, maintenance of open space, the proposed bridge across Mare Island Strait

(the southern crossing), hazardous materials, and cultural resources. These issues are addressed in Chapters 3, 4, and 5.

The public was notified of the Navy's intent to prepare this EIS/EIR by a Notice of Intent (NOI) published in the September 1, 1994, issue of the Federal Register (Vol. 59, No. 169). A copy of the NOI is provided in Appendix B. An announcement of the Navy's intent to prepare this EIS/EIR also was sent to the California Office of Planning and Research. Vallejo filed a Notice of Preparation (NOP) with the California Office of Planning and Research on September 9, 1994, to prepare a joint EIS/EIR (State Clearinghouse Number 94093029). The NOI/NOP was sent to the California State Clearinghouse for distribution to state agencies for review and comment.

To initiate the scoping process, press releases were sent to the news media, and a public notice was published in 3 local newspapers—the Contra Costa Times, the Vallejo Times Herald, and the Fairfield Daily Republic. Scoping letters, with an attached summary of the reuse plan and a description of alternatives and environmental issues to be considered in the EIS/EIR, were mailed to public agencies, public interest groups, and individuals either known to have an interest or thought to have an interest in the disposal and reuse of Mare Island Naval Shipyard. The scoping letter invited written comments and announced that a public scoping hearing would be held in Vallejo on September 22, 1994. Approximately 30 individuals, including agency representatives and members of the public, attended the scoping hearing. Issues identified through the scoping process are summarized in Section 1.6.2.

1.6.2 Summary of Scoping Issues

During the EIS/EIR scoping process, which ended October 21, 1994, 33 letters were received from members of the public, interested groups, and Federal, state, and local agencies. These comments identified several issues and concerns, summarized below. These issues have been evaluated in the EIS/EIR. Because this document is an environmental evaluation of the reuse plan, comments on the mix of land uses in the reuse plan itself are not addressed in the EIS/EIR, except as they have bearing on environmental issues. Following each issue statement, a response is provided that indicates how this issue relates to the EIS/EIR evaluation.

- Southern Crossing - Respondents expressed concern over the effects of a southern crossing on the open space, wildlife, and scenic beauty found at the southern end of Mare Island. Respondents also offered alternatives to the southern crossing, including increased ferry service, new light rail service, improvements to existing island entrances, and construction of a tunnel instead of a bridge.

Response. The traffic impacts of a southern crossing are discussed in Section 4.9 of this document. Other impacts, such as biological and air quality impacts, are discussed in their respective sections.

- Traffic - Respondents addressed traffic and transportation issues related to the reuse of Mare Island. Some expressed concern over the effects vehicular traffic would have on SR 37, Napa County roadways, the Mare Island Causeway bridge, and other local freeways. Others expressed the need for alternative access to Mare Island, including trams, electric buses, bicycle and pedestrian walkways, and light rail.

  Response. These issues are discussed in Sections 3.9 and 4.9 of this document.

- Dredging and Dredge Ponds - Respondents offered comments on Mare Island dredging operations. Some requested investigation of the dredge disposal areas for hazardous material and unexploded ordnance contamination. One respondent requested that alternatives to dredged material disposal be developed. Some letters expressed support for transfer of dredge ponds to the USFWS, while one expressed support for a dredged material reuse, handling, and contained disposal facility.

  Response. These issues are discussed in the biological resources, water resources, and hazardous materials sections of this document (Sections 3.6, 3.7, 3.13, and 4.6, 4.7 and 4.13) and Section 5.5 Cumulative Impacts. Many of these areas are on lands that will revert to the state upon disposal of the property, and use of the property would be outside Federal or city jurisdiction. Some of this land will transfer to the USFWS and some land will be encumbered by conservation easements.

- Seaport Development - Respondents requested the identification of areas that would be designated for port or port-related use.

  Response. The shipyard areas historically used for port or port-related use conceivably could remain the same if appropriate tenants are interested. However, specific land use designations have not yet been developed in the reuse planning process. The general recommendations for reuse contained in the plan are evaluated in this EIS/EIR.

- Reuse Alternatives - Several respondents suggested alternatives for the reuse of Mare Island. Recommendations included education, ecotourism and historic tourism, cultural arts, and natural resource conservation reuse alternatives. Another suggestion was the reuse of Mare Island as a prison.

Response. The alternatives considered in this EIS/EIR include consideration of education, historic tourism, cultural arts, and natural resource conservation. The reuse of an island as a prison was considered and eliminated as an alternative in this EIS/EIR. See Section 2.1.2 for a discussion on the selection of alternatives.

- Project Area Alternatives - Several responses requested alternatives for specific reuse areas, including the Roosevelt Terrace housing complex. Some respondents requested that alternatives to the Retail/Residential Area (Reuse Area 10) be considered, taking into consideration the level of contamination potentially present and the effects on the open space areas at the southern end of the island. A respondent suggested that all nonindustrial areas on Mare Island be used for recreation and nature preservation.

  Response. Roosevelt Terrace is proposed for continued use as housing by the reuse plan. The specific type of housing has not yet been determined. Alternatives to the Retail/Residential Area are provided in the Medium Density Alternative. The Open Space Alternative includes expanded open space acreage on the island. See Chapter 2 for a description of the alternatives.

- Alternate Power - Several respondents expressed concern over an alternate source of electricity for Mare Island, suggesting that 2 electricity sources were necessary. They supported the anticipated removal of the Cullinan Ranch power line but expressed concern that the reuse alternatives develop a replacement source of power. A letter writer suggested constructing a cogeneration facility on Mare Island, replacing the power plant and using the existing distribution system. Concern also was expressed over the marketability of Mare Island property once the 10-year reduced electrical rate agreement with the Western Area Power Authority has expired.

  Response. The Cullinan Ranch power line was removed in 1996, subsequent to publishing the Draft EIS/EIR. Public utilities on Mare Island are addressed in Sections 3.12 and 4.12 of this EIS/EIR.

- Wetlands and Wildlife Resources - Several respondents addressed the impacts the reuse plan would have on wetlands and wildlife, including threatened or endangered species, and requested including in the EIS/EIR a complete biological survey of all plant and animal species on Mare Island. A respondent requested a thorough discussion of the effects of the reuse plan on the island's ecosystem; others requested that all project impacts to wildlife be addressed in the document. Some letters expressed concern over the preservation of wetlands and sensitive habitats.

Response. Sensitive plant, wetlands, and bat surveys were completed for this EIS/EIR, and extensive information from previous work was included. These issues are discussed in Sections 3.6 and 4.6 of this document.

- Socioeconomic Impacts and Project Cost - It was requested that an evaluation of the socioeconomic impacts on surrounding neighborhoods and businesses resulting from the reuse alternatives be included in the EIS/EIR, and extensive information from previous work was included. A respondent requested an evaluation of impacts on the Vallejo school system. Another requested an evaluation of Mare Island's reuse on the Napa County Airport Industrial Area. Several respondents questioned the cost effectiveness of the reuse plan and the ability of Vallejo to fund such a project.

  Response. Socioeconomic impacts on population, housing, employment and schools are discussed in Section 4.2 of this document. Developing a cost-effective analysis of the reuse plan would require more specific information regarding future tenants and the terms of future lease agreements. A fiscal analysis is normally not part of an environmental analysis but rather a separate study prepared from more specific information regarding future development.

- Hazardous Materials and Unexploded Ordnance - It was recommended that a full and complete assessment of all contaminants be prepared and any spread of contaminants be contained. Respondents suggested that the status of unexploded ordnance be included in the EIS/EIR, including a study of lead contamination from unspent ammunition. One letter recommended a study of radiation levels on Mare Island and in the surrounding area.

  Response. Mare Island completed an EBS (US Navy 1994c), documenting hazardous materials and waste on the island. The hazardous materials sections of this EIS/EIR (3.13 and 4.13) provide a summary of this information and a discussion of potential impacts from disposal and reuse of the island.

- Water Resources - One letter writer expressed concern over the effects reuse would have on the Napa River and its resources. Another respondent requested an evaluation of the potential water quality impacts associated with the reuse plan, focusing on stormwater runoff and nonpoint source pollution. One citizen questioned the effects of improving freeway infrastructures on bay resources.

Response. These issues are discussed in the water resources sections (3.7 and 4.7) of this document.

- Mare Island Elementary School - Two letters addressed issues associated with the Mare Island Elementary School. One suggested that a wide range of educational uses be considered for the school. Another requested that the EIS/EIR evaluate land uses, traffic, access to public services, and the possible existence of environmental hazards around the school and on the students' route to school.

  Response. The reuse plan does not identify the types of educational uses to be considered for the elementary school. This will occur as part of the subsequent planning process during development of a specific area plan. Evaluation of impacts specific to the elementary school will require detailed data regarding student numbers, housing location, and hours of operation. Such specific information is not provided in the reuse plan and therefore is not analyzed beyond a general level in this EIS/EIR.

- Geological Considerations - Respondents were concerned over the effects of earthquake faults, settling of fill areas, and 100-year flood zones on the reuse of Mare Island.

  Response. These issues are discussed in the water resources (3.7 and 4.7) and geology (3.8 and 4.8) sections of this document.

- Building Condition - Several respondents expressed concerns over the condition of the buildings on Mare Island. Their letters questioned the seismic stability of the buildings, their compliance with city codes, and the cost of repairing them. Respondents requested an evaluation of the buildings for lead paint and asbestos. A concern was expressed over the potential for landfill gas generation and accumulation within the buildings constructed on or near former landfills.

  Response. These issues are discussed in the geology (3.8 and 4.8), utilities (3.12 and 4.12), and hazardous materials (3.13 and 4.13) sections.

- Industrial Reuse - A few comments were related to the light and heavy industrial reuse areas proposed for Mare Island. One respondent requested that the EIS/EIR explain what is intended for these areas. One letter suggested that the industrial area boundaries be defined by their need for an improved infrastructure. One respondent questioned the cost to Vallejo to provide utilities for the heavy industrial use versus the Navy cost to provide these same services (but with water allotments and cheaper electricity).

Response. The EIS/EIR level of analysis is consistent with the general level of detail provided in the reuse plan. The reuse plan does not designate specific tenants for the reuse areas. The actual costs to provide services will be determined when future tenants are identified. Vallejo is developing an agreement with the Navy to establish the process for infrastructure transfer. See the utilities section (3.12) for a discussion of the existing infrastructure on Mare Island.

- Public Services - One respondent expressed concern over the effects of closing the Mare Island Police Department.

  Response. This issue is discussed in the public services sections (3.3 and 4.3).

- Land Use - One respondent suggested the EIS/EIR describe the land uses surrounding Mare Island, particularly the San Pablo Bay National Wildlife Refuge.

  Response. Existing land uses are described in the affected environment section (3.1).

- Real Property Transfer - One letter requested that a detailed description of the real property transfer process be provided in the EIS/EIR.

  Response. This process is described in Section 1.3.

- Reuse Plan - Several respondents had concerns regarding the economic feasibility of the reuse plan and the potential fiscal impact to Vallejo. There also were concerns about a perceived limited public involvement process during the reuse planning process.

  Response. The reuse plan was developed prior to initiating the environmental analysis. The issues expressed by the respondents are not part of the environmental analysis. Additional opportunities for public comment are available, however, throughout the public involvement process.

1.6.3 Public Review

Draft EIS/EIR

The public was invited to review and comment on the Draft EIS/EIR. A Notice of Availability (NOA) was published in the Federal Register on September 1, 1995, public notices were mailed to those on the mailing list, and press releases were furnished to the local news media. When the Draft EIS/EIR

was published, a Notice of Completion (NOC) (CEQA) was filed with the State Clearinghouse, beginning a 45-day public comment period. This comment period provided an opportunity for the public to review the issues addressed in the impact analysis and to offer comments on any aspect of the process. During this comment period, 19 letters were received from interested groups and Federal, state, and local agencies. Copies of these letters and responses to their comments are in Chapter 10 of Volume 1.

A public meeting was held at the Vallejo City Hall on September 27, 1995, to formally receive oral and written comments on the Draft EIS/EIR. The date and time of the meeting was announced in the media and was included in the transmittal letter accompanying the Draft EIS/EIR. Ten individuals attended this meeting and 4 individuals presented oral comments. A transcript of their comments and responses to the comments are provided in Chapter 10 of Volume 1.

Final EIS/EIR

This Final EIS/EIR, which incorporates and responds to comments received on the Draft EIS/EIR, will be furnished to persons registering official comment on the draft document and to others requesting a copy. Copies of the comment letters received and the responses to these letters can be found in Chapter 10 of Volume 1. A NOA of the Final EIS/EIR will be published in the Federal Register and in public notices and press releases.

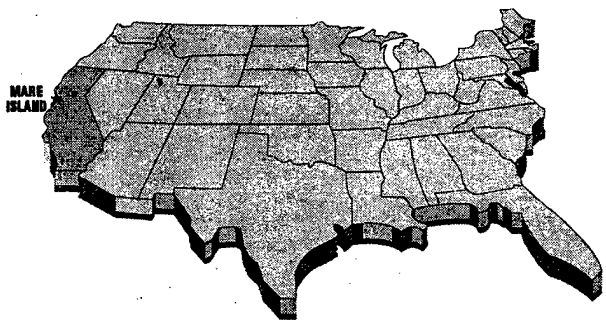
As required under NEPA, there will be a 30-day waiting period after the Final EIS/EIR is published. During this period, the public may comment on the adequacy of responses to comments. After the waiting period, a Record of Decision (ROD) will be issued.

To comply with CEQA, the city prepared an NOP and an NOC, copies of which can be found in Appendix B. A Notice of Determination (NOD) will be filed after the Vallejo City Council makes the findings of approval required by CEQA for the amendment of the General Plan and any other land use actions taken concurrently with the amendment.

Comments on this document can be sent to the following addresses:

US Navy
Engineering Field Activity West
900 Commodore Drive
San Bruno, CA 94066-5006
Attn: Mr. Jerry Hemstock, Code 703JH
Fax: (650) 244-3206

City of Vallejo
Development Services Department
555 Santa Clara Street
Vallejo, California 94590
Attn: Ann Merideth, Director
Fax: (707) 552-0163



2.0 ALTERNATIVES, INCLUDING THE PROPOSED ACTION

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2. ALTERNATIVES, INCLUDING THE PROPOSED ACTION

This chapter describes the process the community used to develop its reuse plan, the selection criteria for reuse alternatives, the disposal action, and the reuse alternatives considered in the EIS/EIR. Reuse alternatives that were considered but eliminated from detailed review also are described. A summary of significant impacts and mitigations under each alternative is provided in Table 2-9.

The Preferred Alternative (the NEPA "proposed action" and the CEQA "project") evaluated in this EIS/EIR is the disposal of surplus land at the former Mare Island Naval Shipyard and reuse of the property and facilities as proposed under the community reuse plan. Community reuse alternatives analyzed in this EIS/EIR include the Reuse Plan Alternative, Medium Density Alternative, and Open Space Alternative. The No Action Alternative as required by NEPA and CEQA also is evaluated. The activities required for Federal disposal of the property are assumed a part of each alternative except the No Action Alternative.

2.1 DEVELOPMENT OF ALTERNATIVES

2.1.1 Community Reuse Planning

The reuse planning process for Mare Island began with Vallejo's creation of the Mare Island Futures Project immediately after the 1993 BRAC closure list was approved by President Clinton and accepted by Congress in October 1993. Two groups were created to guide Vallejo's reuse efforts, the Mare Island Futures Legislative Committee and the Mare Island Futures Work Group. The legislative committee was composed primarily of local, state, and Federal elected officials. The work group was made up of representatives of labor and business; governmental, educational, and environmental organizations; and private citizens with interests in the reuse of Mare Island. The goals of these groups were as follows:

- Develop and implement an expeditious reuse process with political and legislative support that resulted in Mare Island being an economic asset for Vallejo and the rest of Solano County, Napa County, and the Bay Area; and

- Develop a reuse process that would identify immediate steps to address the needs for those impacted by closure, mid-term steps for securing interim uses for existing facilities that are ready for reuse, and long-term steps for identifying uses for the entire site.

The first step in the land use planning process was the development of the Conceptual Reuse Plan. The plan was completed in November 1993 and accepted by the Vallejo City Council in December 1993. In 1994, the Urban Land Institute (ULI), a group of real estate and development professionals, evaluated the Conceptual Reuse Plan in terms of market feasibility. Their report was released in April 1994. Based on the findings of a market feasibility evaluation, economic analysis, and input from 5 resource groups (Human Services, Retraining, Employment Development, Educational Facilities, and Recreation, Open Space, and Arts) and the Navy's Historical Preservation and Archaeology committee, the work group developed the reuse plan.

During preparation of the reuse plan, all meetings of the work group, legislative committee, and resource groups were open to the public and were advertised on local television and in the local newspaper. Participation in the resource groups was open to anyone who wanted to contribute time and ideas. A number of community forums, led by trained facilitators, were held to receive and record input from the public in developing the conceptual and reuse plans. Some of these meetings were broadcast on the local television channel. All materials, including reports, videos, and other informational items, were made available to the public.

The reuse plan was prepared for the entire former shipyard property, since property disposition had not yet been determined. It includes former shipyard property subject to Federal agency conveyance and acreage that will revert to the State of California; these lands are not part of the proposed action considered in this EIS/EIR. Inclusion of the entire property enabled integrated planning for the area. The Vallejo City Council accepted the Mare Island Final Reuse Plan in July 1994 and modified the plan in March 1998 to reflect the transfer of portions of Reuse Areas 5, 9, and 10 to the US Army.

2.1.2 Selection of Alternatives

NEPA and CEQA require an EIS/EIR to consider a range of reasonable alternatives. NEPA requires that alternatives be evaluated at the same level of detail as the Preferred Alternative; CEQA allows consideration of alternatives at a lesser level of detail but requires that alternatives be evaluated that would reduce or eliminate significant adverse impacts of a Preferred Alternative. This EIS/EIR addresses alternatives at the NEPA-required level of detail. The EIS/EIR Preferred Alternative is the disposal of Federal surplus land at the former Mare Island Naval Shipyard and the subsequent reuse of the surplus land at the shipyard, as described in the Mare Island Final Reuse Plan.

EIS/EIR alternatives include the Preferred Alternative (Reuse Plan Alternative), the Medium Density Alternative, an Open Space Alternative, and the required No Action Alternative. These alternatives were developed to

allow analysis of a range of uses and to reduce significant impacts on the environment of the Reuse Plan Alternative. Buildout of the alternatives is projected for the year 2020. Specific reuse options included in the alternatives include expanding or eliminating the golf course, constructing or not constructing the southern crossing bridge, and keeping or removing the rifle range. Navy disposal of its surplus property at Mare Island is assumed to be a part of each reuse alternative.

The Mare Island Final Reuse Plan includes all of the land formerly occupied by the Mare Island Naval Shipyard. These lands include property granted to the Navy by the State of California for operating the shipyard (reversionary land). The conveyance legislation requires that these lands revert to the state when no longer needed for military purposes. The reuse plan also includes excess property subject to transfer directly to other Federal agencies. The Navy has no control over use of reversionary property after reversion to the State of California, nor will the Navy have control over the future use of land transferred to other Federal agencies.

Alternatives analyzed in the EIS/EIR include the following:

- **Reuse Plan Alternative (Preferred Alternative)** - Under the Reuse Plan Alternative, the Navy would dispose of its surplus property, including conservation easements, at the shipyard, and a local entity or entities would implement the reuse plan for surplus land in each of the planning areas. This alternative would extensively use existing structures and would largely continue historic land uses. Development of a regional park, expansion of the golf course to 18 holes, relocation of the rifle range, and substantial industrial, commercial, and community reuse of the island would occur under the Reuse Plan Alternative. A bridge would be constructed across the Mare Island Strait at the southern end of the island (the southern crossing) and new retail/residential development would be constructed in Reuse Area 10. The Reuse Plan Alternative also includes extensive island roadway improvements to serve the proposed reuses.

- **Medium Density Alternative** - This represents a lower density development of the reuse plan. It does not include the bridge across Mare Island Strait (the southern crossing) or development of the retail/residential area in Reuse Area 10. Additionally, the existing rifle range would remain in its current location. Land uses, including the conservation easements, would be consistent with the Reuse Plan Alternative but at reduced densities. The Medium Density Alternative is intended to reduce potential impacts on traffic, air quality, and noise, and represents a moderate level of buildout for the island.

- **Open Space Alternative** – This alternative incorporates environmental protection strategies on surplus land suggested by the public and concerned agencies during the scoping process, as well as the conservation easements. As with the Medium Density Alternatives, it does not include the bridge across Mare Island Strait (the southern crossing) or development of the retail/residential uses in Reuse Area 10. Land uses, including the conservation easements, would be consistent with the other alternatives but at further reduced densities. Under this alternative, the golf course and rifle range would be eliminated, with the golf course land incorporated into a proposed regional park. The rifle range site would be converted to recreational uses serving the surrounding residential uses.

- **No Action Alternative** - Under this alternative, surplus property and facilities at Mare Island would remain in Federal ownership in a caretaker status with limited interim leasing. Transfer of excess property to other Federal agencies and return of state reversionary land would take place. The on-site activity would be limited to security and maintenance activities associated with caretaker status of surplus properties.

The reuse alternatives provide a range of options to allow Federal and local decision-makers, interested agencies, and the public to understand the environmental effects of disposal and reuse of the site under several different scenarios. The reuse alternatives, including the Reuse Plan Alternative, are described at a relatively general "program" level of detail. In most cases, uses of specific buildings and parcels will be determined as reuse is implemented, and these uses are beyond the scope of this analysis. Although not specifically identified in the reuse plan, many of the specific land uses suggested in scoping, but not specifically identified in the alternatives discussion, could be incorporated under the reuse plan evaluated in the EIS/EIR. Figure 2-1 compares the land use densities proposed under each reuse alternative.

2.2 DISPOSAL

Navy disposal is included in this document to evaluate the impacts from disposal of Federal surplus property at the former Mare Island Naval Shipyard out of Federal ownership. Actions associated with Navy disposal are discussed in Section 1.3. Federal disposal is assumed as a part of each alternative except the No Action Alternative.

2.3 REUSE PLAN ALTERNATIVE (PREFERRED ALTERNATIVE)

The Reuse Plan Alternative is the implementation of the Mare Island Final Reuse Plan for surplus properties at Mare Island. The reuse plan focuses on

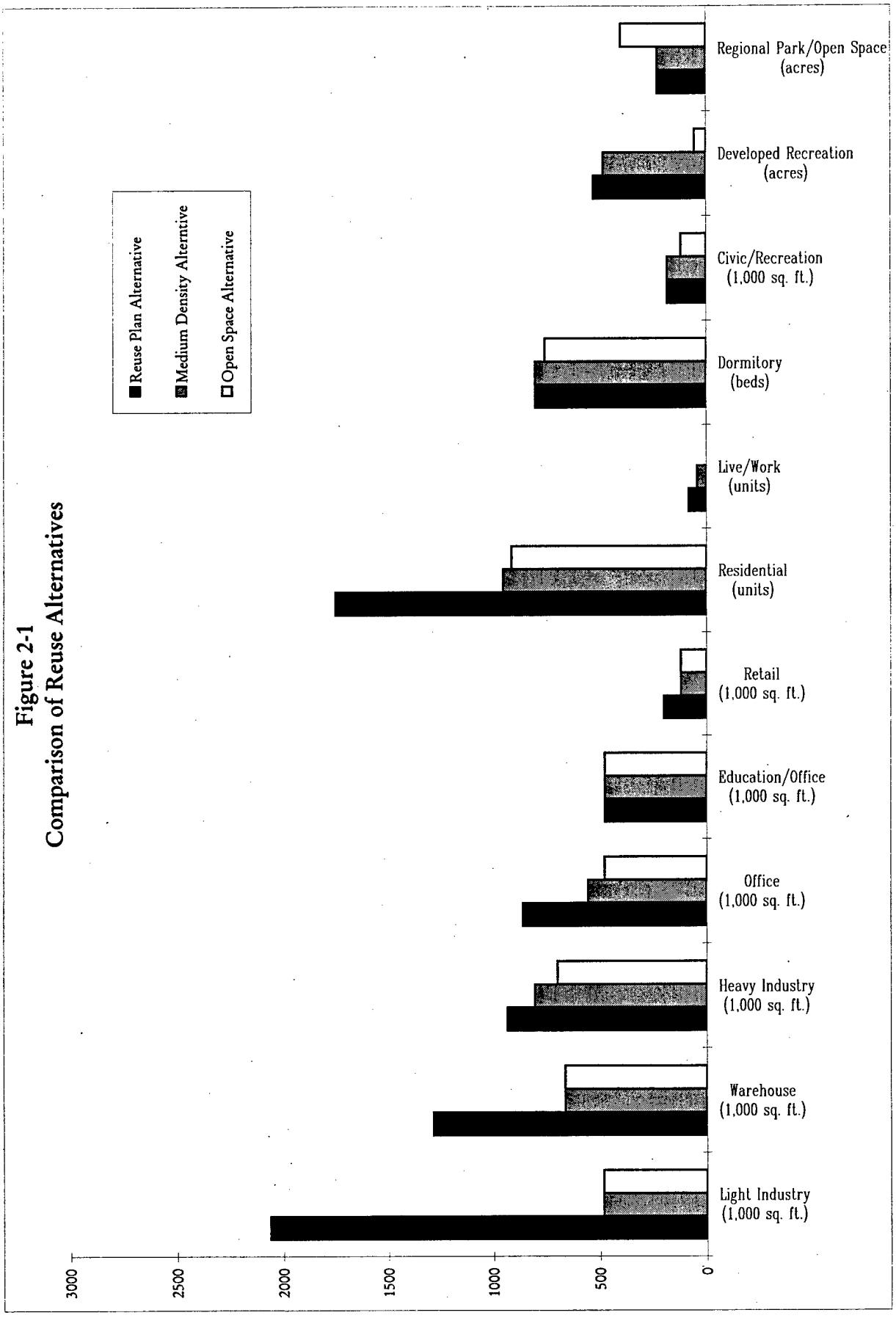


Figure 2-1
Comparison of Reuse Alternatives

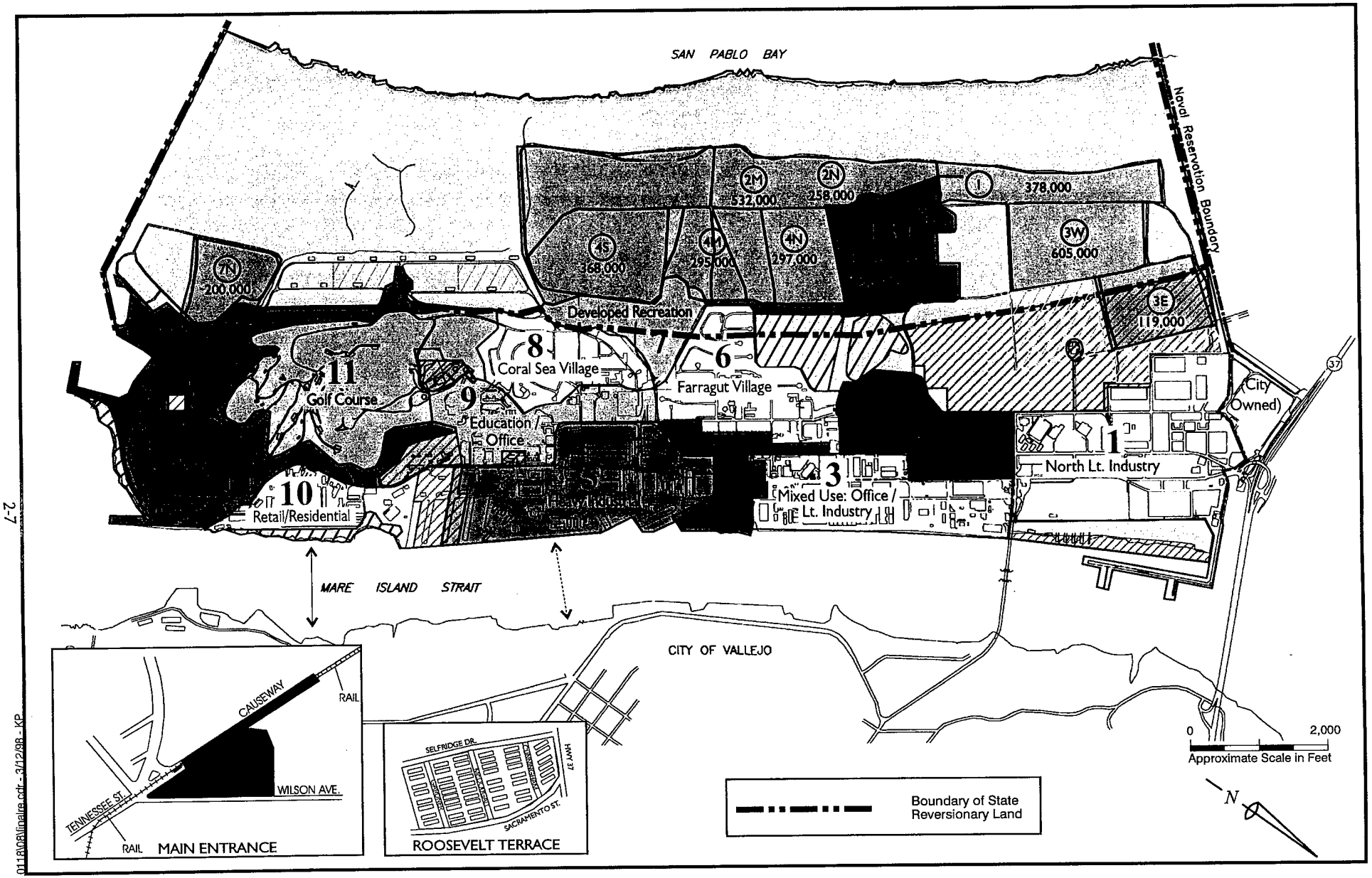
extensive reuse of existing structures and other historic land uses. The design and planning strategies of the reuse plan were intended to provide a framework within which Vallejo can respond to particular economic development opportunities. Buildout of the reuse plan is projected to occur by year 2020.

The reuse plan identifies 13 reuse areas on the island, as well as wetland and dredge disposal areas along the western side of the island that have not been identified by reuse area numbers. The reuse plan also includes the Main Entrance, Roosevelt Terrace housing complex, and the railroad spur, located off the island. The reuse plan describes future land uses encompassing all of the former Mare Island Naval Shipyard, including surplus land, land reverting back to the State of California, and land subject to transfer to other Federal agencies.

Most of the 13 reuse areas are located on surplus land, but portions of Reuse Areas 6, 7, 12, all of Reuse Area 13, and most of the open space/wetland/ dredge disposal areas are located on state reversionary land. The property subject to Federal agency transfer is located in Reuse Areas 5, 9, 10, and in the open space/dredge disposal area immediately west of Reuse Area 1. Conservation easements have been established in Reuse Areas 1, 10, and 12 and the wetland area adjacent to the property designated for transfer to the USFWS.

Approximately 5.7 million square feet of nonresidential uses (excluding civic/recreation facilities) and 1,786 residential units would be in use on and off the island at buildout of the Reuse Plan Alternative. Approximately 81 acres would be placed in conservation easements located throughout the island. Approximately 18 miles of streets would be improved, and 7 miles of new road would be built. Eight signalized traffic intersections would be constructed. Off-site improvements would include constructing the southern crossing and its approach and redeveloping Roosevelt Terrace Housing. Various utility systems would be abandoned or upgraded. The projected population of Mare Island at buildout in 2020 would be approximately 5,075; projected employment would be approximately 9,669.

Following are descriptions of specific land uses recommended in the reuse plan for each of the planning areas and off-island properties. Land uses proposed under this alternative are shown in Figure 2-2. Proposed densities within each of the reuse planning areas, as well as acreages of surplus, reversionary, and Federal agency transfer lands within each planning area, are shown in Table 2-1.



The Mare Island Reuse Plan identifies 13 reuse areas and two off-site properties. Both the Reuse Plan Alternative and the Medium Density Alternative reflect the same land use configurations. The southern crossing would occur only under the Reuse Plan alternative.

LEGEND:

- ↔ Potential Southern Crossing Locations
- 1 Reuse Area
- Residential
- Commercial
- Historic
- Federal Transfer Lands
- Institutional
- Light Industrial
- Heavy Industrial
- Active Dredge Pond
- Inactive Dredge Ponds
- Developed Recreation
- Recreation/Open Space
- Wetlands/Open Space
- Conservation Easements

Source: Vallejo, 1994c

Final Reuse Plan

Mare Island, California

Figure 2-2

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TABLE 2-1
REUSE PLAN ALTERNATIVE (YEAR 2020)
ESTIMATED LAND USE[1]

	Reuse Areas	Total Area	Disposition			Land Use										
			Surplus Land[2]	Federal Transfer[3]	State Reversionary	Conservation Easement	Light Industry	Warehouse	Heavy Industry	Office	Education/Office	Retail	Residential	Dormitory	Civic/Recreation	Developed Recreation
		Ac.	Ac.	Ac.	Ac.	Ac.	Sq. Ft.	Sq. Ft.	Sq. Ft.	Sq. Ft.	Sq. Ft.	Sq. Ft.	DU	Beds	Sq. Ft.	Ac.
1	North Light Industry	192	192			29	566,000	1,285,100		56,600		42,100	80		16,200	
2	Neighbor-hood Center	85	85							234,300		40,000	83	45	131,200	25
3	Mixed-Use: Office/Lt. Industry	111	111				690,000			432,000						9
4	Historic District	47	47									5,000	25	257	30,100	7
5	Heavy Industry	119	112	7			419,500		934,300							
6	Farragut Village	107	92		15							40,000	222			
7	Developed Recreation	48	12		36											48
8	Coral Sea Village	70	70									27,100	270			4
9	Education/ Office	101	80	21			387,700			113,000	457,500	1,500	50	300		8
10	Retail/ Residential	94	78	16		9						20,000	750			
11	Golf Course	172	172												3,000	172
12	Regional Park	172	161	1	10	11							6		1,250	0
13	Open Space/ Recreation	92			92											92
Other Reuse Areas	Wetlands & Submerged Land	2,865	80		2,785	32										
	Dredge Disposal	922	69	162	691											
	Roosevelt Terrace	29	29										300			
	Main Gate & Rail Spur	26	26							26,200						
	Totals	5,252	1,416	207	3,629	81	2,063,200	1,285,100	934,300	862,100	457,500	175,700	1,786	602	181,750	365

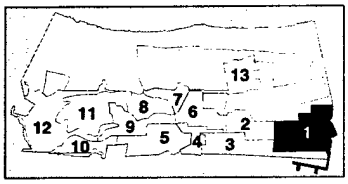
[1]Table presents land use quantities at plan buildout, including existing facilities and new development.

Ac. = Acres
Sq. Ft. = Square Feet
DU = Dwelling Units

[2]Exact acreages will be determined by survey prior to conveyance.
[3]Acreages for the Federal transfers are approximate and have been rounded to the highest acre.

Source: Vallejo 1994c; US Navy 1998

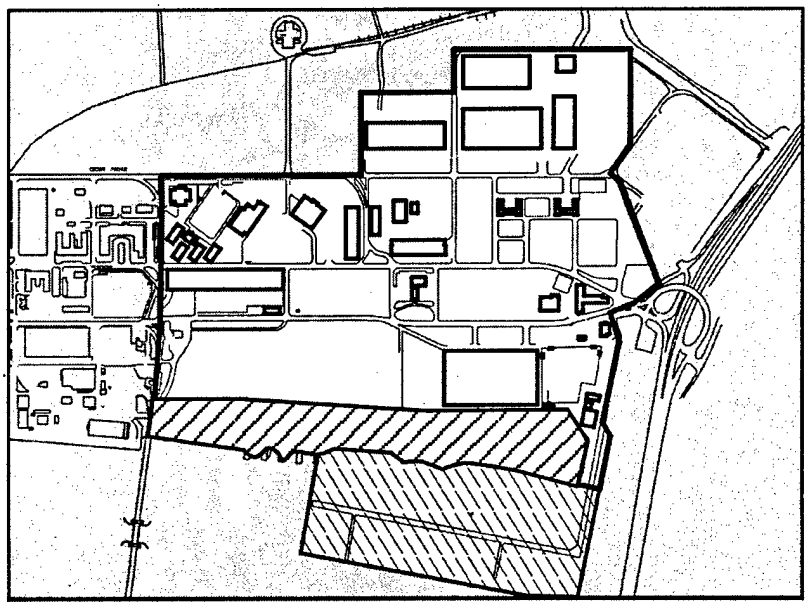
2.3.1 On-Island Reuse Areas



Reuse Area 1. North Light Industry (192 acres)

This reuse area is located between SR 37 and Gate #2 to the north and G Street to the south. Wetland areas border the reuse area to the east and west, and an active dredge disposal area lies west of Building 751. The 29-acre wetland parcel east of the reuse area would not be developed. It has been established as a conservation easement and would provide an informal passive recreation area. The reuse area is characterized by concentrations of buildings surrounded by large areas of open space that are either paved, covered with ornamental grasses, or disturbed open field grasslands. The predominant use is warehouse activity with lesser amounts of light industrial, retail, office, residential, and recreational uses.

The reuse plan envisions reuse of this area as an opportunity for an industrial park because of its location between the only 2 existing access points to the island. Most of the buildings would be suitable for reuse and would not require considerable infrastructure improvements. Development potential for new construction is identified between Walnut and Railroad Avenues within an open grassland area. Removing the existing ballfields near Buildings 617 and 621 is recommended to provide additional development opportunities. Under the reuse plan, the ballfields would be relocated either adjacent to Morton Field in Reuse Area 2 or to other areas on the island designated for recreation.



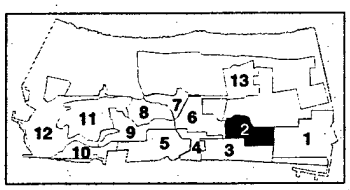
State reversionary land

Conservation easement

As proposed by the plan, the commissary (Building 1001) between Cedar and Walnut Avenues north of G Street would be converted to light industrial use, and the Navy Exchange (Building 897) would be reused as office/retail space. Existing large warehouses (Buildings 751, 627, 759, and 655) also would be reused. Specific recommendations for the existing dormitory units are not provided, but the plan indicates that certain dormitory units may be converted to other uses, such as live/work units, student housing, or office space, while other dormitory buildings are likely not marketable and would need to be demolished. Buildings 617, 621, and 675 would be demolished under the plan.

Access to the North Light Industry Area from SR 37 southbound would be via the off-ramps onto Walnut Avenue. Access to SR 37 from the reuse area would be northbound on Railroad Avenue. Landscaping would be increased at the entrance of the reuse area and along Walnut and Railroad Avenues. The causeway entrance onto the island would be re-landscaped.

A pier located at the far northern end of the island is on submerged state reversionary land and therefore not analyzed as part of the proposed action. Use of this site is addressed in Section 5.5, Cumulative Impacts.

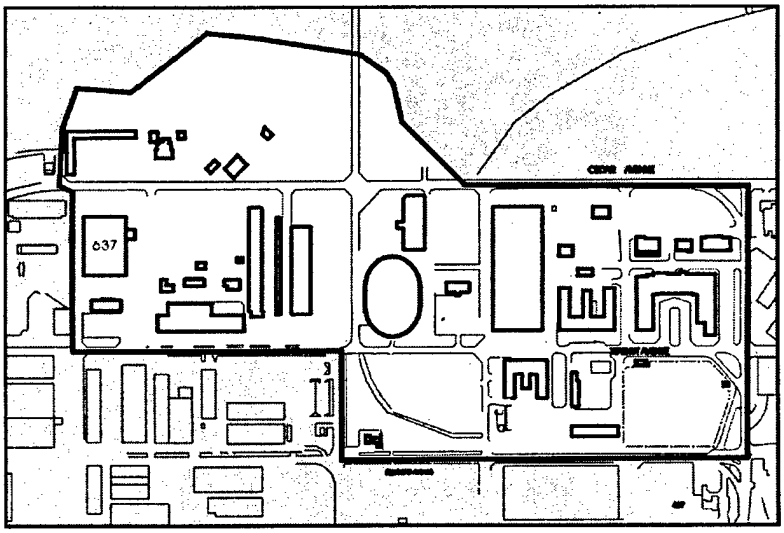


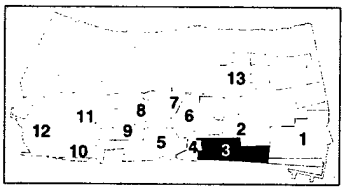
Reuse Area 2. Neighborhood Center (85 Acres)

This area is located south of the North Light Industry Area and bridges the central housing complex (Farragut Village) and the central recreation activities along G Street. It is bounded by G Street to the north, the Public Works Center (PWC) to the south, Walnut and Railroad Avenues to the east, and wetlands to the west. The area is characterized by community, recreational (Morton Field, Rodman Center, Field House, Mariner Park), and maintenance uses (PWC complex).

The reuse plan's concept for this area is to create a mixed-use center providing community and social services and additional residences. As planned, it would be the civic and community core and would be centered on the Rodman Theater and other facilities, such as the gymnasium, community social services, police facilities, child care center, and Mariner Park. Retail services formerly provided by the Commissary and Base Exchange (in Reuse Area 1) would be replaced by new businesses located closer to the residential areas.

Under the plan, the PWC maintenance area would be redeveloped as a mixture of residential, commercial, and retail activities, necessitating substantial demolition. The existing facilities in this 18-acre area would be removed. Housing would be extended close to the civic and retail core, and a civic open space area would be centrally located to provide a focus for residential, civic, and retail uses. Conversion of several buildings to live/work units would account for about half of the 83 residential units planned for this area. Under the plan, the Rodman and Field House recreational complexes would continue to be used, and Building 637, which houses the train locomotive and repair shop, would remain. Recreational facilities near Morton Field would be expanded to include ballfields and soccer fields. The existing parking area north of A Street would be developed as recreation fields.





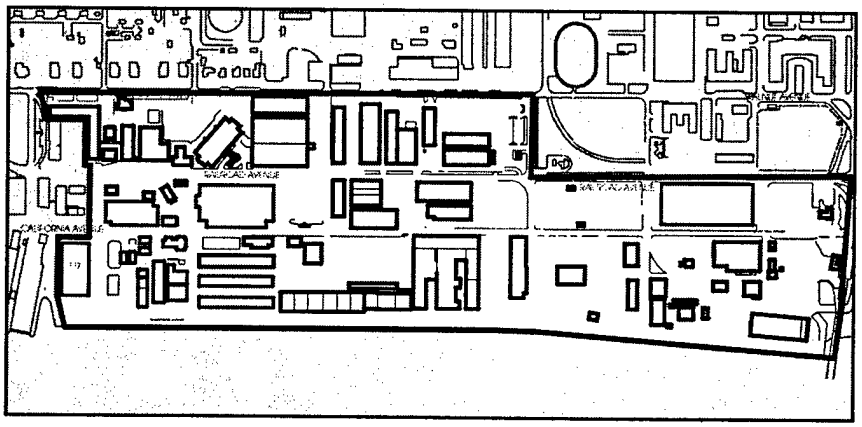
Reuse Area 3. Mixed Use: Office/Light Industry (111 Acres)

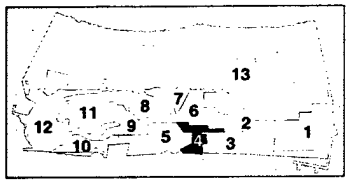
This reuse area extends approximately 3,900 feet between the historic district and the causeway. It is bounded by the causeway to the north, Building 117 to the south, Mare Island Strait to the east, and Railroad and Walnut Avenues to the west. The reuse area includes a mixture of historic and nonhistoric industrial and office buildings that primarily face the waterfront.

The reuse plan envisions this area as an opportunity to focus building and site orientation on the waterfront. Extension of the existing street network to the water's edge would enable the creation of parcels that allow east-west access, with frontage created along the waterfront. Recommended reuses for existing structures include developing small business complex and loft spaces by subdividing the historic and nonhistoric structures.

The reuse plan proposes a waterfront promenade extending the entire length of Reuse Area 3. Landscaping would be included along the promenade and along the pedestrian linkages between the promenade and Neighborhood Center (Reuse Area 2) and Historic District (Reuse Area 4).

Implementing the reuse concept would require significant demolition to provide for sufficient parking and to improve the overall character of this area.





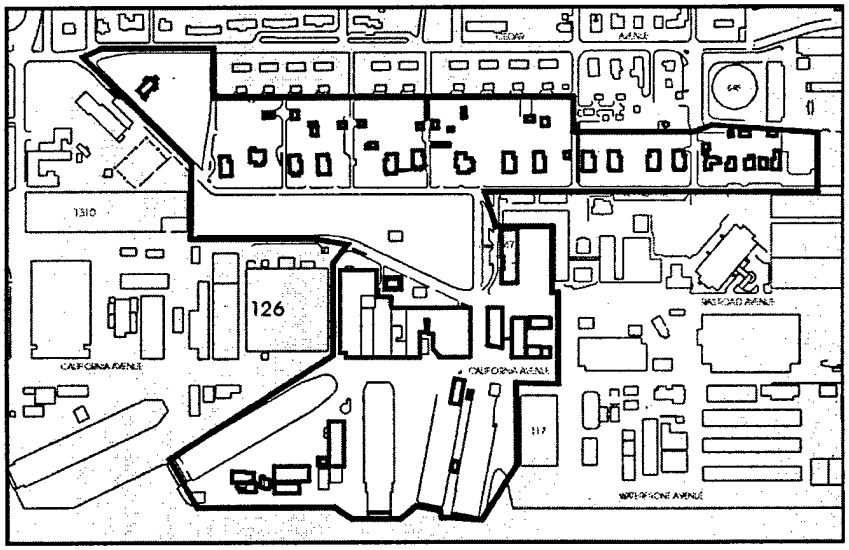
Reuse Area 4. Historic District (47 Acres)

The historic district is centrally located on Mare Island and fronts the waterfront. Two large industrial buildings (Buildings 117 and 126) adjoin its northern and southern boundaries, while the western boundary is Oak Avenue. Elements of the Mare Island Naval Shipyard National Historic Landmark, such as Alden Park, St. Peter's Chapel, and the Classic Revival houses along Captains Row, are in this district, along with Dry Dock 1, the oldest dry dock on the west coast. The reuse area is composed of 2 elements:

- The area adjacent to the waterfront, including Dry Docks 1 and 2, would be devoted as historic and nonhistoric ship repair and related interpretive activities. The waterfront promenade would continue to the extent feasible.

- The Captains Row/Alden Park area would provide permanent historic residences and lodging, restaurants, or office spaces. The chapel and botanical garden in Alden Park would be turned into visitor attractions.

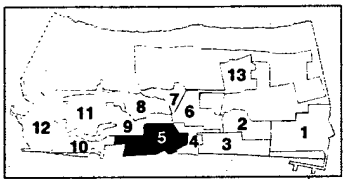
A historic district seaport overlay zone is proposed by the plan to allow the maintenance of historic vessels, training for ship restoration, and preserving the history of naval shipbuilding on the west coast. The historic district could be operated by the Mare Island Historic Park Foundation or other qualified sponsor and would allow private companies to operate in historic buildings, subject to preservation regulations. Under the plan, the 21 historic residences could be made available for sale as private residences, guest lodgings,



or for profit and nonprofit offices. The area's National Historic Landmark status depends on maintaining the integrity of the historic district; this issue is discussed in detail in the cultural resources sections of this document (3.4 and 4.4).

Because a large number of visitors and workers could come together in this small area with few parking spaces, the plan proposes limiting vehicular circulation and parking within the historic district. The plan proposes remote parking or shuttle service to the area. Ferry service from the Vallejo Ferry Terminal across the river also is recommended. As envisioned by the plan, pedestrian and bicycle links from the historic district to surrounding residential and open space areas would be developed, as well as trails connecting the ferry terminus with on-island routes.

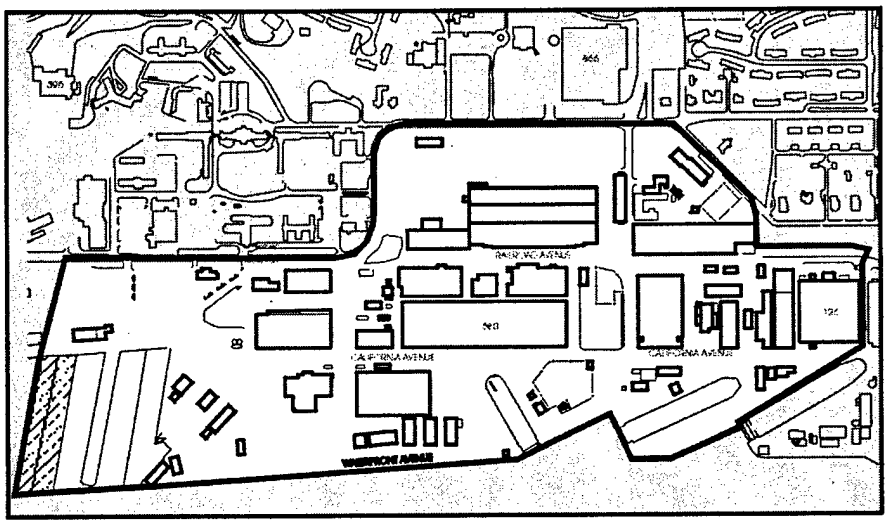
Because of the numerous historic and complementary structures, very little demolition would be anticipated in this area.



Reuse Area 5. Heavy Industry (119 Acres)

This reuse area extends from Ninth Street south to Fifteenth Street and from the waterfront west to Cedar Avenue. It contains some of the largest buildings on the island, 2 working dry docks, and several overhead cranes. Rail freight service is available along lines traversing Railroad and California Avenues.

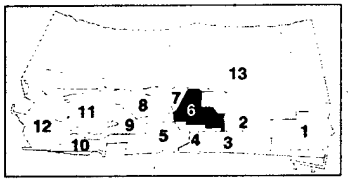
The reuse plan does not consider reuse of existing structures to manufacture large goods, such as ships or rail cars. Manufacturing smaller items, such as scientific instruments, metal processing and fabrication, and chemical and biotechnology testing is considered more likely. To accomplish this, 2 large multistory structures (Buildings 1310 and 126) could be cleared of existing equipment and marketed as "shells" for new industries. Retaining the existing elaborate infrastructure system that was developed to support shipbuilding activities and that includes highly specialized utilities (see Section 3.12 of this document) is recommended under the proposed plan to encourage continued manufacturing activities in the area. Maintenance of the heavy rail lines serving the area would continue under the plan, unless occupancy patterns indicated no further need for rail shipments. Historic buildings and landmarks in this reuse area may be preserved, and the waterfront promenade would be extended to the extent feasible. Approximately 7 acres in this planning area are being transferred to the US Army for the development of a reserve center which is discussed in Section 5.5, Cumulative Impacts.



Land being transferred to US Army

As recommended by the plan, through traffic would be reestablished on Railroad Avenue, with pedestrian circulation proposed along Railroad Avenue and the waterfront promenade. A number of east-west linkages are proposed by the reuse plan in conjunction with extending the transportation system east of Railroad Avenue. Access to the southern crossing bridge across Mare Island Strait could be provided from this reuse area at 14th Street (see Figures 2-2 and 2-3). Local service roads would be upgraded to accommodate the additional traffic volumes as indicated in Figure 2-3 and Table 2-3.

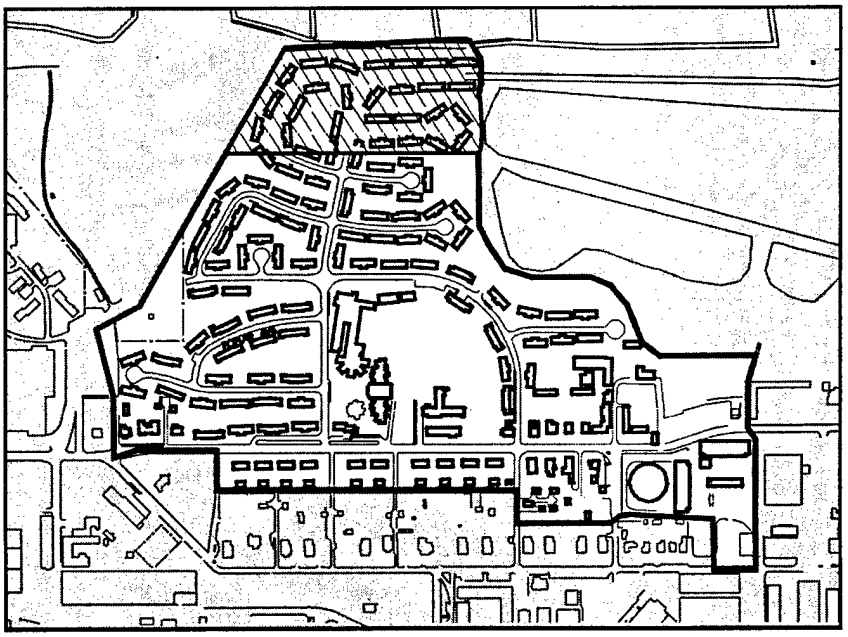
Parking for tenant operations could be at the individual sites, depending on the amount of substandard building space that is cleared. As envisioned by the plan, parking for tenant operations in this reuse area could be located at the individual sites. This would require demolishing Buildings 670, 672, 674, 702, and 738 to create space for parking. Other buildings designated for demolition under the plan are Buildings 617, 621, and 675.



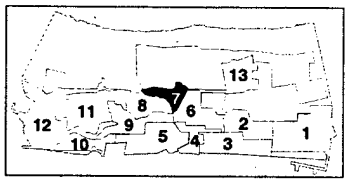
Reuse Area 6. Farragut Village (107 Acres)

Farragut Village is west of the historic district in an area dominated by residential uses. It is bordered by Oak Avenue to the east, the PWC complex to the north, Building 866 to the south, and by several active dredge disposal areas to the west, on state reversionary land. Land uses consist primarily of duplex style residences, dormitories, and a school building and associated grounds. Approximately 30 duplex housing units, or approximately 15 acres, are located on state reversionary land. Potential use of the reversionary property is discussed in Section 5.5, Cumulative Impacts.

Residential use of this area would continue under the Reuse Plan Alternative, with opportunities for new residential and retail construction between Fifth and Third Streets. The plan envisions removing the PWC complex buildings as an opportunity to integrate land uses between Farragut Village and the Neighborhood Center Reuse Area. The Vallejo Unified School District (VUSD) would control and continue to operate the elementary school and adjacent playgrounds.



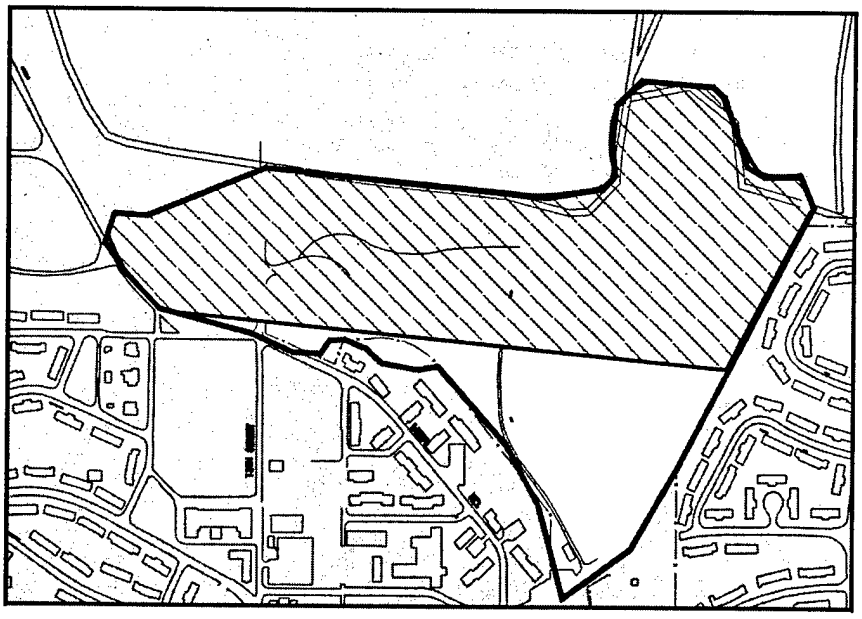
State reversionary land



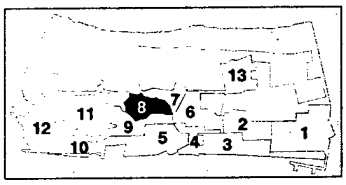
Reuse Area 7. Developed Recreation (48 Acres)

This reuse area is located west of Mesa Road adjacent to the Farragut and Coral Sea residential areas. It now contains a rifle range, open storage, and undeveloped lands. As identified by the plan, the range would be relocated to the southwestern part of the island. Recommended use for this area following range relocation would be for other developed recreation, such as a baseball or soccer field or other recreational uses. As indicated in the reuse plan, the golf course also could be expanded to a portion of this area.

Approximately 36 acres within this reuse planning area are state reversionary land, including a major portion of the rifle range. Potential land uses on reversionary land are discussed in Section 5.5, Cumulative Impacts.



State reversionary land

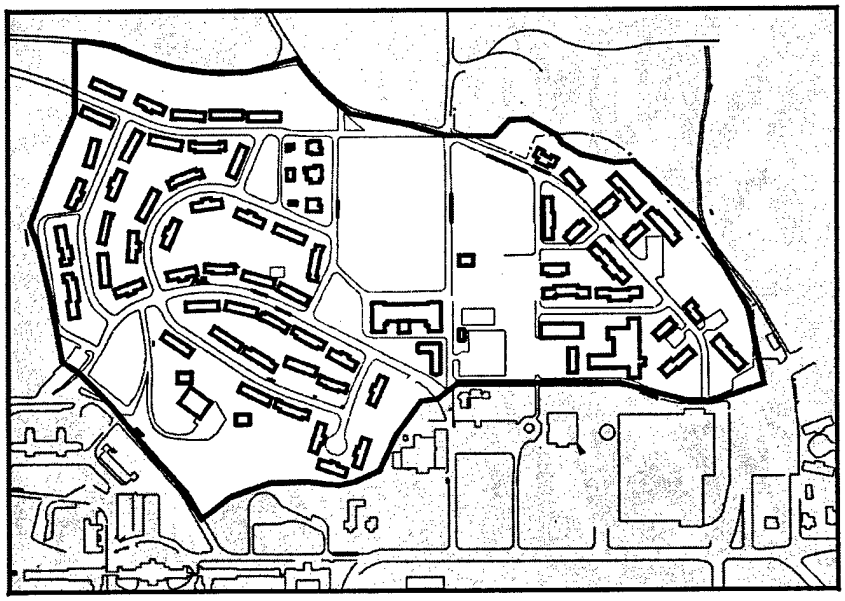


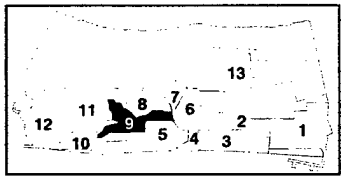
Reuse Area 8. Coral Sea Village (70 Acres)

This residential reuse area is south of the rifle range and is higher in elevation than Farragut Village. The area is bounded by Mesa Road to the north and west, Club Drive to the south, and Building 866 to the east. Views to the wetland areas and San Pablo Bay are available from this area.

Continued residential use of this area is proposed under the reuse plan, with the Marine Barracks (M-37) and other smaller multifamily housing units proposed to be converted to market rate apartments or condominiums. Development of 40 live-work units is also proposed. The parade ground is proposed for redevelopment as a recreational area, with the possible addition of active and passive play areas.

The plan identifies the area north of Thirteenth Street between the Marine Barracks and multifamily housing as a potential infill area for additional residential uses at densities mirroring those found in the multifamily units fronting Mesa Road.



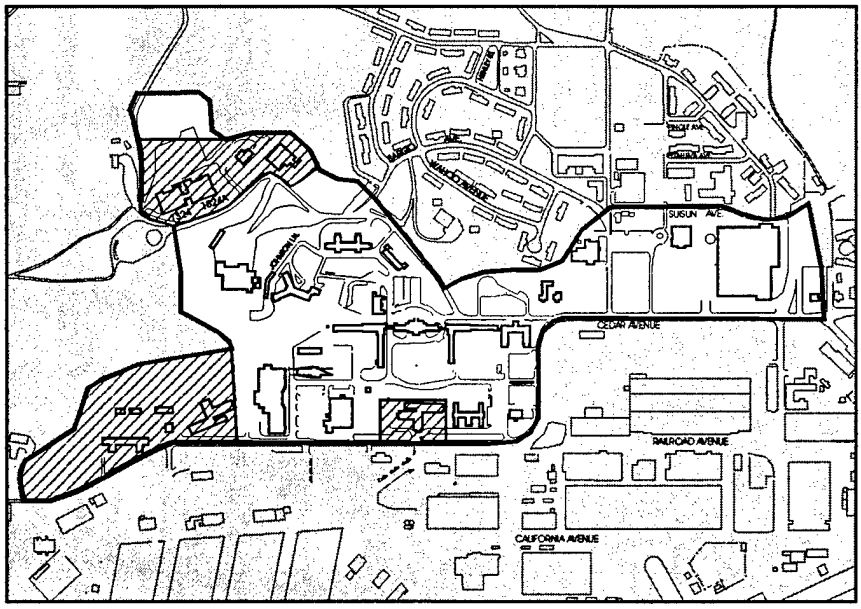


Reuse Area 9. Education/Office (101 Acres)

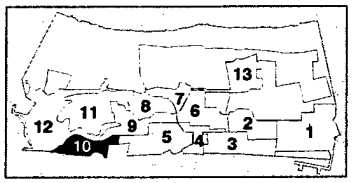
This reuse area is south of Fourteenth Street, east of Club Drive, and west of Railroad Avenue. It formerly housed the Navy's Combat Systems Technical School, as well as the Officers Club (Building 396), an office building, the child care development center, and an electrical shop (Building 866).

Continued educational use of the school and campus area is envisioned under the reuse plan. As indicated by the plan, potential education uses could include hazardous materials remediation techniques training, vocational training, wetlands research, and other educational curricula. The potential for conference facility operators also is identified.

Approximately 8 acres, including Buildings 1324 and 1324A and related areas, are being transferred to the US Forest Service for an administrative headquarters. In addition, approximately 13 acres in this planning area are being transferred to the US Army for the development of a reserve center. The reuse of these properties is considered as part of the cumulative impacts discussion in Section 5.5 of this document.



Land being transferred to USFS and US Army



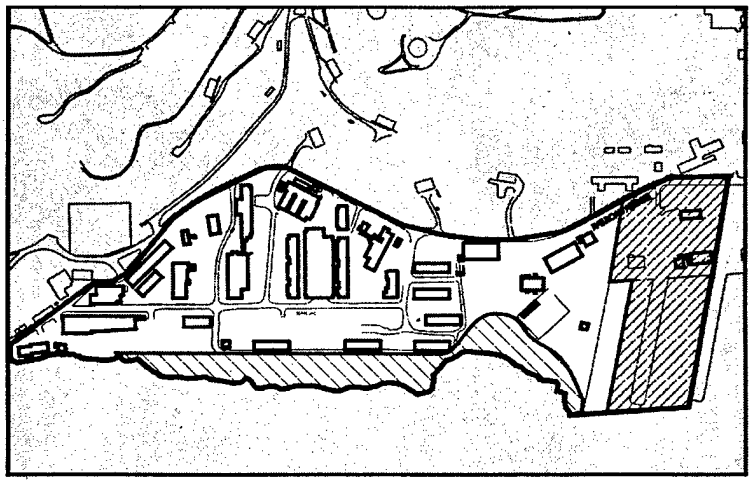
Reuse Area 10. Retail/Residential (94 Acres)

This reuse area, adjacent to Mare Island Strait, is bounded by the proposed regional park to the south and golf course to the west. It includes numerous small buildings and vacant lots. A 9-acre wetland area located along the eastern edge of the reuse area has been established as a conservation easement and would not be developed (see Figure 2-2). Approximately 16 acres in this planning area are being transferred to the US Army for development of its reserve center.

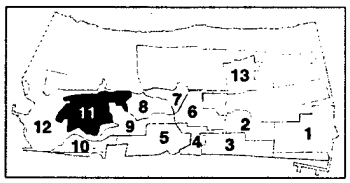
As proposed by the plan, the area could be developed with new residential construction, particularly multifamily housing that could be constructed at a density of 8 to 15 dwelling units to the acre. This housing could be "stepped" into the hillside, offering view possibilities according to the plan. The plan recommends that a waterfront promenade be developed next to the shoreline. A new 20,000 square foot retail facility also is proposed in the plan. Development of a marina was originally proposed for this planning area. However, the site designated for the marina has become part of the US Army Federal transfer parcel.

The Mare Island landing of the southern crossing bridge could be developed in this area, although an exact location of this crossing has not been determined. Developing the southern crossing would require detailed environmental analysis and subsequent permits from regulatory agencies overseeing transportation and water-related development. Design and construction proposals would be required to consider impacts to the wetland area, as well as other impacts (e.g., noise, visual, community cohesiveness) throughout the project approval process.

Demolition of all structurally unsound buildings that are not feasible to rehabilitate would occur as part of the redevelopment of this area.

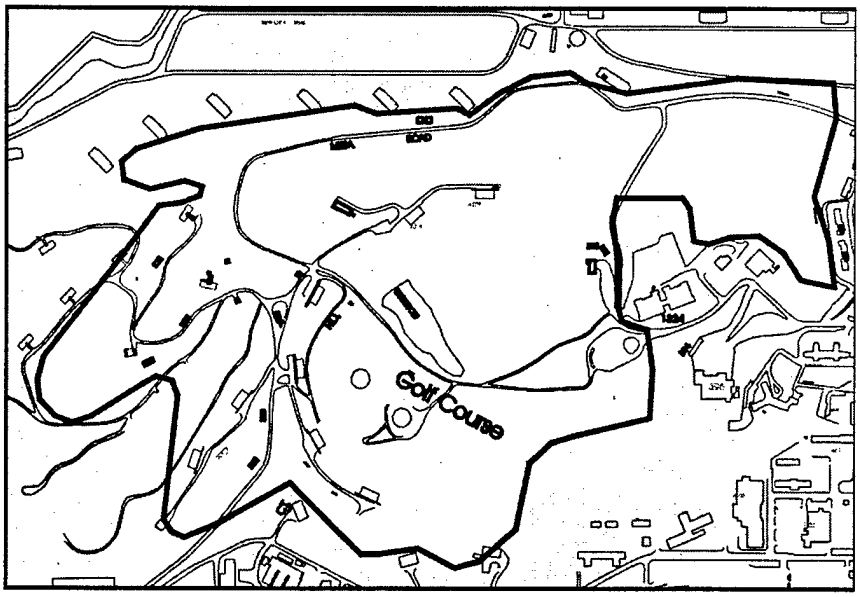


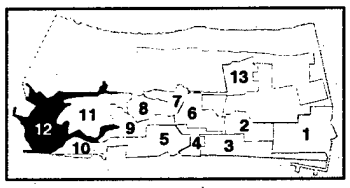
Land being transferred to US Army Conservation easement



Reuse Area 11. Golf Course (172 Acres)

An existing 9-hole golf course and small clubhouse facility accessed from Club Drive comprise approximately 100 acres of this reuse area. The course is on the northern flank of the hill at the southern end of the island. As proposed by the reuse plan, the course would be expanded to 18 holes, with commensurate expansion of the existing clubhouse and parking facilities.



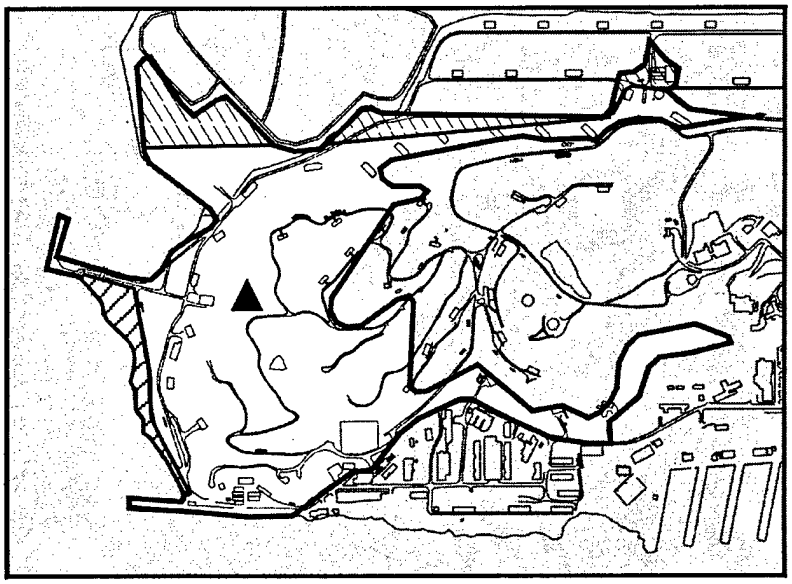


Reuse Area 12. Regional Park (172 Acres)

The highest point on the island, extending 284 feet above sea level, defines this undeveloped area at the southernmost portion of the island. As proposed by the reuse plan, this area would be developed as a regional park, with walking, cycling, and equestrian trails linked to other areas, particularly the wetland/dredge pond system and waterfront promenade. Approximately 10 acres of wetlands along the southern boundary of this reuse area would not be developed. A conservation easement of 11 acres will be established for this area. Access to the shoreline for hiking and cycling and to the piers for fishing would be provided under the plan. It is recommended that trails be designed and constructed to minimally disturb the natural terrain and character of the area.

The existing equestrian facility in the wetland/dredge pond area on the western portion of Mare Island, could be relocated to the regional park under the Reuse Plan Alternative. The existing cemetery would be maintained as a historic cemetery. The reuse plan also proposes that the rifle range be relocated from its existing location in Reuse Area 7 to the regional park.

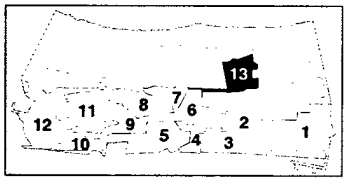
The reuse area includes an approximately 1-acre site that is being transferred to the USCG for installation of a communications tower. A small portion of this reuse area (approximately 10 acres) also is located on state reversionary land. Reuse of the Federal agency transfer land and state reversionary land is discussed as a part of cumulative impacts in Section 5.5 of this document.



State reversionary land

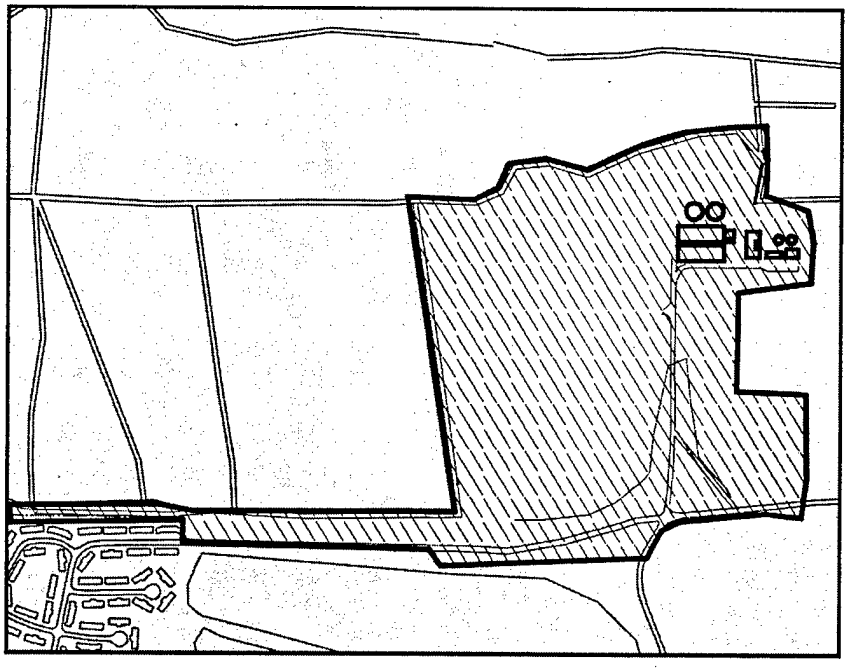
Land being transferred to the US Coast Guard

Conservation easement

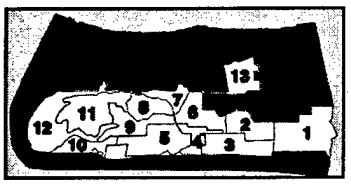


Reuse Area 13. Open Space/Recreation (92 Acres)

This reuse area is located on a landfill site between active dredge ponds and nontidal wetlands. It is west of the Neighborhood Center and is accessed via a dirt road extension of A Street. Because of its distance from the more developed portions of the island and its proximity to existing open spaces, the area is proposed for recreation or open space under the reuse plan. However, because all of this reuse area is located on state reversionary land, its potential reuse is addressed in Section 5.5, Cumulative Impacts.



State reversionary land

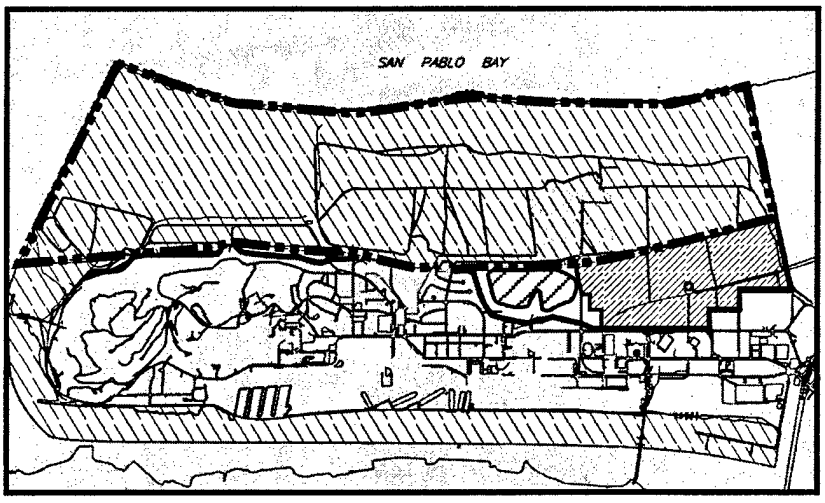


Wetlands, Submerged Lands and Dredge Disposal Areas (3,787 Acres)

The western half of Mare Island consists mainly of open space land, most of which is state reversionary land. The area includes tidal and nontidal wetlands, submerged lands, and active and inactive dredge disposal areas. Dredge ponds make up a large section of the planning area with 10 active sites and 6 inactive sites (see Figure 2-2). Land being transferred to the USFWS and property covered by a conservation easement are also contained in this area. Submerged state reversionary lands are also located along the southern and eastern edges of Mare Island (see Figure 1-5).

Under the reuse plan, the levees of the dredge ponds would be raised by 4 feet to ensure at least a 25-year capacity for dredged sediment storage space. The inactive dredge ponds could be reactivated in the future under the plan. Since these ponds are located on state reversionary land their ultimate use will be decided by the State Lands Commission. Reuse considerations for this area are discussed in Section 5.5 as cumulative impacts.

Approximately 162 acres in this area, including Building 505, are being transferred to the USFWS for development of a wildlife refuge and interpretive center. The surplus land adjacent to the proposed USFWS property consisting of inactive dredge ponds would not be developed. A conservation easement of approximately 32 acres would be established for a portion of this area. Potential uses identified in the reuse plan for the state reversionary land and uses of Federal transfer lands are addressed as cumulative projects in Section 5.5, Cumulative Impacts.



Land being transfered to USFWS

State reversionary land

Conservation easement

2.3.2 Off-site Properties

Main Entrance

The Main Entrance to Mare Island is located across the Mare Island Strait in Vallejo. Building 513 was formerly used for pass and identification, security, and administration. Under the reuse plan, Building 513 would be converted to retail or professional office space, and the parking area would be upgraded to accommodate the change in use. The recent realignment of Mare Island Way and Wilson Avenue by Vallejo does not affect the reuse of Building 513. The Causeway would continue to provide access to and from Mare Island.

Roosevelt Terrace

Roosevelt Terrace, a 600-unit multifamily housing area, is south of Highway 37 and east of the Napa River in Vallejo. Under the reuse plan, up to half of these World War II-era buildings would be removed to provide space for landscaping, recreational areas, and additional parking. Remodeling and reuse of the remaining building for approximately 300 affordable housing apartments is proposed.

Railroad Spur

Mare Island Naval Shipyard was served by a Navy-owned railroad operated and managed by shipyard employees. The main line of the railroad extends north-south along Railroad Avenue from Causeway Street to Building 900 at the south end of the industrial area. This railroad connects with a common railroad carrier using a single track-line crossing the Napa River drawbridge into Vallejo. It continues for about 1 mile to connect with the California Northern Railroad just north of the intersection of Sereno Drive and Broadway in northern Vallejo. The Reuse Plan Alternative assumes that this railroad spur would continue to be used to support on-island reuse activities requiring rail service.

2.3.3 Transportation Improvements

The following narrative summarizes the transportation-related improvements proposed as part of the Reuse Plan Alternative to serve the reuse activities on Mare Island. These improvements would be made over a 20 to 30 year period, consistent with the anticipated implementation timeline for the reuse plan. Improvements include increasing access to and from the island, improving on-island roadways and on-island traffic flow, incorporating transit opportunities and adding pedestrian and bicycle amenities to the island.

Southern Crossing Bridge

Under the Reuse Plan Alternative, a 4- to 6-lane bridge would be constructed across Mare Island Strait between Mare Island and Vallejo. The precise location for this proposed bridge has not been determined, but 2 general location areas have been identified on Figures 2-2 and 2-3. To provide access to this bridge from Mare Island, Railroad Avenue would be widened up to 6 lanes with bicycle lanes, curb and gutter and sidewalk from 14th Street to the southern crossing.

Development of the southern crossing bridge would be required to comply with all applicable environmental laws, including NEPA and CEQA. A separate environmental analysis would be conducted, including public involvement, when a right-of-way has been identified. Consultation and coordination with several environmental resource protection and permitting agencies as indicated in Table 2-2 would be required throughout the review and approval process.

TABLE 2-2
ENVIRONMENTAL RESOURCE PROTECTION AND PERMITTING AGENCIES

Federal	State
Federal Highways Administration	California Department of Fish and Game
National Marine Fisheries Service	California Department of Transportation
U.S. Army Corps of Engineers	State Lands Commission
U.S. Coast Guard	State Water Resources Control Board
U.S. Environmental Protection Agency	
U.S. Fish and Wildlife Service	
Regional	**Local**
Metropolitan Transportation Commission	City of Vallejo
San Francisco Bay Area Air Quality Management District	Solano County
San Francisco Bay Conservation and Development Commission	
San Francisco Bay Regional Water Quality Control Board	

Source: Tetra Tech, 1997

On-Island Roadways

Under the Reuse Plan Alternative, 18 miles of streets would be improved, 7 miles of road would be constructed and 8 intersections would be signalized. New and upgraded collectors and arterials would be constructed with bike lanes, and all new or upgraded streets would have curbs, gutters, and sidewalks. Crosswalks would be provided at all intersections and at mid-block where needed. All signalized intersections would have pedestrian and cycle-activated signals. Figure 2-3 illustrates the locations of the improvements to

the on-island system that would be provided. Table 2-3 lists the circulation system improvements that would occur as part of the Reuse Plan Alternative. Implementation of the improvements listed on Table 2-3 and shown on Figure 2-3 would mitigate any impacts of this alternative on Mare Island roadways and parking.

Transit Service

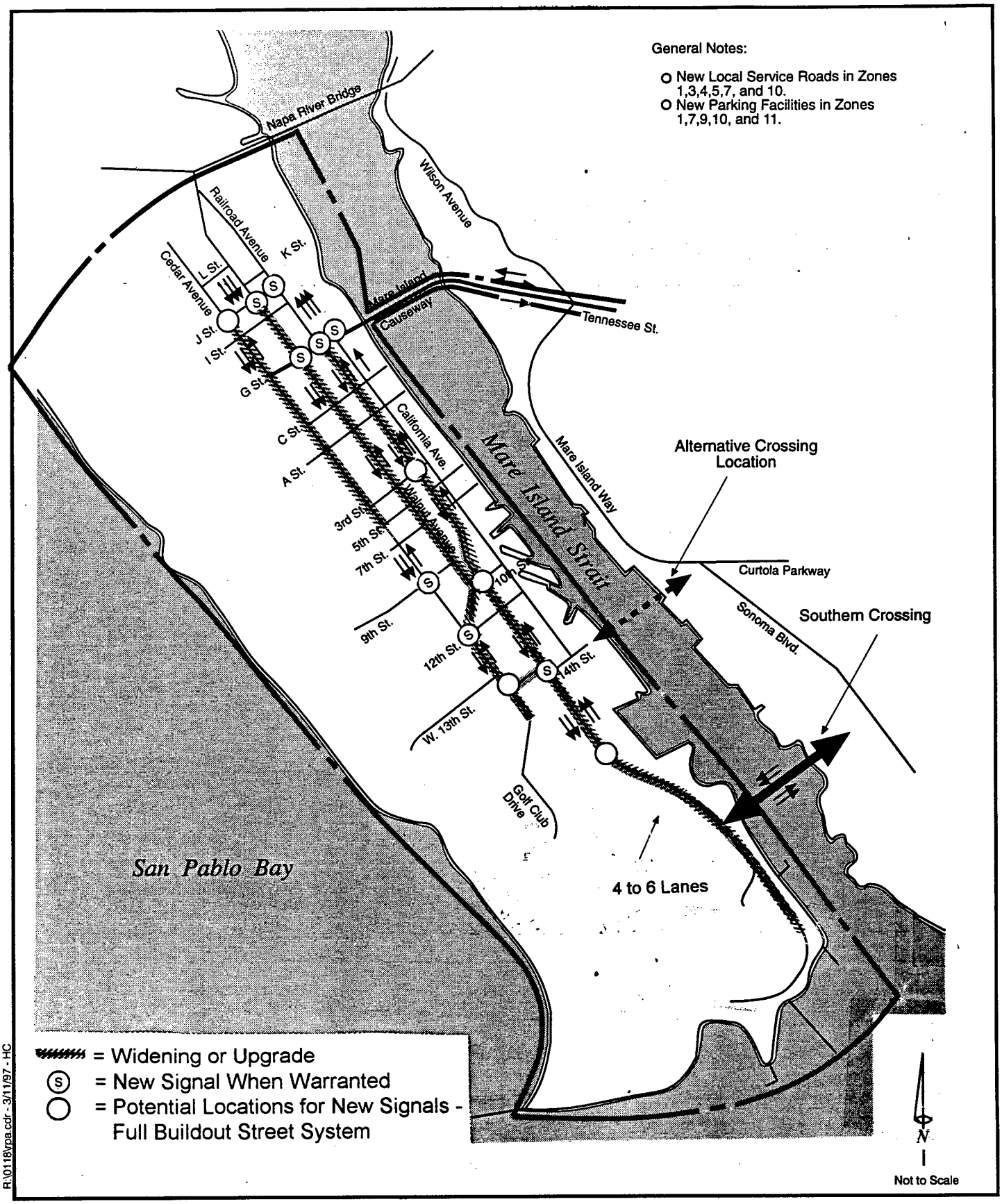
Under the Reuse Plan Alternative, ferry service across Mare Island Strait between Vallejo and the Mare Island Ferry Terminal would be established. Intra-island transit service on-island also would be provided, although usage would depend on ease of auto access to and from the island during all periods of the day, availability and cost of parking at convenient locations on the island, and the extent, frequency, safety, and quality of the transit service provided. As island roadways are improved and new roadways are constructed, bus routes would be incorporated into the design, and rights-of-way would be reserved for potential light-rail service. In addition, shelters and benches would be provided at transit stops.

Bicycle and Pedestrian

Under the Reuse Plan Alternative a waterfront promenade and pedestrian linkages among the promenade, Neighborhood Center, and Historic District would be developed. Trails would connect the proposed ferry terminus with on-island routes. Pedestrian circulation would be established along Railroad Avenue and the waterfront promenade. In the regional park area, walking, cycling, and equestrian trials would be linked to other areas.

A bicycle and pedestrian system is part of a Transportation Demand Management (TDM) program outlined by Vallejo for Mare Island in order to minimize auto traffic and required roadway capacity. Appendix Figure G-7 illustrates these improvements. Appendix Table G-4 indicates what these improvements would be. Two essential components of the TDM program are bicycle and pedestrian facilities, capitalizing on the unique conditions imposed by the island itself and the history of bicycle use within the shipyard.

A pedestrian-bicycle corridor is proposed for Walnut Avenue between G Street and Cedar Avenue to serve as a link among the waterfront promenade, Neighborhood Center, and Historic District. This street would have lower traffic volumes and frequent stop signs and is recommended for slow 25-mph speed limits. Pedestrian and bicycle access along the waterfront may be provided by a 12-foot wide multi-use boardwalk (the promenade), subject to compatibility with future industrial users in the vicinity. The promenade is



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Roadway improvements with the Southern crossing.

LEGEND:

Mare Island Naval Shipyard Property Boundaries

Reuse Plan Alternative Street System Improvements

Mare Island, California

Source: Vallejo, 1994c

Figure 2-3

TABLE 2-3
MARE ISLAND STREET SYSTEM IMPROVEMENTS
REUSE PLAN ALTERNATIVE[1]

Facility	Facility Improvement Description
Mare Island Arterials and Collectors	Provide new traffic control, directional, and other informational signs
North Access	Reconfigure approach to north entrance to include 3 inbound and 3 outbound lanes (see Appendix G, Figure G-4)
Mare Island Causeway/G Street	Retain 3-lane reversible operation (see Appendix G, Figure G-3)
New Signal Controllers (4)	Replace existing signal controllers
Railroad Avenue	Extend Railroad Avenue from 8th Street to 14th Street as a primary arterial and widen to 3 lanes plus bike lanes, parking, and curb and gutter from the north gate to 14th Street
Railroad Avenue at 14th Street	Construct new traffic signal when warrants are met
Railroad Avenue[2]	Upgrade Railroad Avenue from Coast Guard Station to proposed public fishing pier
Tenth Street	Extend Tenth Street from Walnut Avenue to Railroad Avenue to provide access to planned industrial area
Minor Streets	Close substandard streets that are not planned for future public use
Public Fishing Pier	Construct public parking lot near fishing pier
Existing Parking Lots (Reuse Areas 1-10)	Upgrade signing and striping at existing parking lots
Walnut Avenue[2]	Widen to 3 lanes plus bike lanes, parking, and curb and gutter from the north gate to G Street; widen to 3 lanes plus bicycle lanes and curb and gutter from J Street to G Street; widen existing 2 lanes to add bicycle lanes and curb and gutter from G Street to Cedar Avenue
Railroad Avenue at J Street	Construct new traffic signal when warrants are met
Walnut Avenue at J Street	Construct new traffic signal when warrants are met
J Street	Realign and construct 2 lanes between Walnut Avenue and Cedar Avenue
G Street	Upgrade G Street to include 4 12' lanes between Mare Island Causeway and Cedar Avenue (see Appendix G, Figure G-2)
Club Drive	Upgrade Club Drive to include 2 12' lanes from Cedar Avenue to Sargo
Local Service Roads (Reuse Areas 1, 3, 4, 5, 7, 9 and 10	Assumes the need to construct about 4.2 miles of new collectors
Existing Parking Lots (Reuse Areas 1-10)	Upgrade signing and striping at existing parking lots
New Parking Lots (Reuse Area 1)[2]	Construct 1,750 surface parking spaces
New Parking Lots (Reuse Area 6)	Construct 180 new surface parking spaces
New Parking Lots (Reuse Area 7)	Construct 170 new surface parking spaces
New Parking Lots (Reuse Area 9)[2]	Construct 1,000-space parking garage

TABLE 2-3 *(continued)*
MARE ISLAND STREET SYSTEM IMPROVEMENTS
REUSE PLAN ALTERNATIVE[1]

Facility	Facility Improvement Description
New Parking Lots (Reuse Area 10)[2]	Construct 110 surface parking spaces
New Parking Lots (Reuse Area 11)[2]	Construct 30 surface parking spaces
Cedar Avenue[2]	Widen to 3 lanes plus bicycle lanes and curb and gutter from J Street to Club Drive
Railroad Avenue Approach to Southern Crossing[2]	Widen Railroad Avenue up to 6 lanes with bicycle lanes, curb and gutter, and sidewalk from 14th Street to the Southern Crossing
Railroad Avenue[2]	Widen to 2 lanes with turn bays, bicycle lanes, and curb and gutter from Southern Crossing to the former Coast Guard Station
Cedar Avenue at J Street[2]	Construct new traffic signal when warrants are met
4th Street at Railroad Avenue[2]	Construct new traffic signal when warrants are met
Cedar Avenue at 14th Street[2]	Construct new traffic signal when warrants are met
10th Street at Railroad Avenue[2]	Construct new traffic signal when warrants are met
Railroad Avenue at Marina Entrance[2]	Construct new traffic signal when warrants are met
Southern Crossing[2]	Construct a 4- to 6-lane bridge between Vallejo and Mare Island

Source: Vallejo 1994c, as amended by Crane Transportation Group

[1] The main entrance intersection at Wilson Avenue/Tennessee Avenue/Mare Island Causeway has been reconfigured to increase capacity and efficiency of this roadway system (Vallejo 1994c and 1997). The Roosevelt Terrace street system is adequate for existing and proposed residential uses. Access to the site may be affected by the planned SR 37 freeway upgrade, depending on the configuration of interchanges in the area.
[2] These improvements would occur only under the Reuse Plan Alternative.

proposed to extend from Reuse Area 10 (Retail/Residential) in the south to the fishing pier and wetlands area in the north adjacent to Reuse Area 1 (North Light Industry).

2.3.4 Sensitive Resource Conservation Measures

Since publication of the Draft EIS/EIR, the Navy and Vallejo have worked closely with Federal and state resource agencies to identify mechanisms to protect sensitive biological and cultural resources on Mare Island. Formal agency consultations were completed in 1997 with issuance of a Biological Opinion by the USFWS and the signing of a Memorandum of Agreement (MOA) regarding cultural resources at Mare Island. The conditions contained in these 2 documents have been incorporated into the Final Reuse Plan and the other alternatives, thereby reducing potential significant impacts to a nonsignificant level.

As part of all of the reuse alternatives for Mare Island, Vallejo and the Navy will implement specific measures for endangered and threatened species

protection and management. These measures are described in detail in the USFWS Biological Opinion included in Appendix F.

As discussed in the Biological Opinion, Vallejo will implement an active predator management program of not to exceed 20 hours per week which effectively manages predators upon conveyance of the shipyard from the Navy to the city (Vallejo 1997) or other non-Federal entity. In addition, Vallejo will establish Covenants, Conditions, and Restrictions (CC&Rs) to limit the number of cats and dogs allowed in each residential unit on Mare Island and prohibit unleashed dogs and cats outside property lines of individual units. These restrictions will be enforced through the CC&R enforcement process or through the Vallejo Municipal Code (Merideth 1996).

The Navy and Vallejo will protect the delta smelt and Sacramento splittail during the caretaker period and subsequent community reuse, respectively. Prior to transfer or lease of the dry docks or an other area where in-water activities may adversely affect delta smelt or Sacramento splittail, the Navy will inform the future owner or user that federally endangered or threatened fish species occasionally occur in the vicinity of Mare Island and that an endangered species incidental take permit may be required from the USFWS, National Marine Fisheries Service (NMFS), and California Department of Fish and Game (CDFG) (USFWS 1997).

The reuse plan also provides conservation easements covering approximately 81 acres of sensitive habitat on surplus land at Mare Island, identified in the USFWS Biological Opinion (see Figures 1-5, 2-2, and Table 2-1). The Navy will execute the easement prior to conveyance of the property to Vallejo or other non-Federal entity. It is anticipated that the USFWS would hold the easement and that Vallejo or other non-Federal entity would take ownership of the underlying fee. Holding the easement will allow the USFWS to restrict development through enforcement of its real estate rights, as well as through its regulatory authority to protect endangered and threatened species. The Navy would not retain that responsibility after property disposal.

2.4 MEDIUM DENSITY ALTERNATIVE

The Medium Density Alternative, also illustrated by Figure 2-2, proposes the same types of land uses indicated in the reuse plan but at reduced densities and with some exceptions. The bridge across Mare Island Strait (the southern crossing) and Reuse Area 10 (Retail/Residential), considered as part of the Reuse Plan Alternative, would not be developed under this alternative. Additionally, the rifle range (Reuse Area 7) would not be relocated. There would be no multifamily residential and minimal commercial/industrial structures constructed under this alternative; rather, existing facilities would be converted or remodeled.

As with the Reuse Plan Alternative, this alternative includes the entire property at Mare Island and the off-island sites, including surplus land, land reverting back to the State of California, and excess land subject to transfer to other Federal agencies. This alternative also includes the approximately 81 acres of conservation easements to be established on Mare Island for the protection of endangered species habitat. The potential reuse of reversionary land and Federal agency transfer property is considered in Section 5.5, Cumulative Impacts.

Approximately 3.1 million square feet of nonresidential space and 996 residential units would be in use on and off the island under the Medium Density Alternative. Approximately 18 miles of streets would be improved, 3 miles of new road and 5 signalized traffic intersections would be constructed. Additionally, various utilities would be abandoned or upgraded. At full buildout of this alternative, the population of Mare Island would be approximately 3,142, including residents of Roosevelt Terrace, and projected employment would be approximately 5,273.

The following description of the Medium Density Alternative encompasses both the on-island and off-island properties. The reuse areas for this alternative are consistent with those indicated in the Reuse Plan Alternative (see Figure 2-2). Proposed densities within each reuse area are shown on Table 2-4.

2.4.1 On-Island Reuse Areas

Reuse Area 1. North Light Industry (192 Acres)

Under this alternative, the overall reuse concept for the area would not change. The primary difference between the Reuse Plan Alternative and this alternative is the amount of light industry and warehouse space in this area recommended for reuse. Under this alternative, the amount of light industry and warehouse space would be approximately 1 million square feet less than under the Reuse Plan Alternative (reduced from 1.85 million square feet to about 0.83 million square feet). Recommendations to move the existing ballfields would be the same as under the Reuse Plan Alternative, and conversion of the commissary and Navy Exchange buildings, as recommended under the Reuse Plan Alternative, would be included. Dormitories would be reused, as indicated under the Reuse Plan Alternative. The 29-acre wetland parcel east of the reuse area would be protected by a conservation easement and would not be developed (see Figure 2-2).

TABLE 2-4
MEDIUM DENSITY ALTERNATIVE (YEAR 2020)
ESTIMATED LAND USE[1]

	Reuse Areas	Total Area	Disposition			Land Use										
			Surplus Land[2]	Federal Transfer[3]	State Reversionary	Conservation Easement	Light Industry	Warehouse	Heavy Industry	Office	Education/Office	Retail	Residential	Dormitory	Civic/Recreation	Developed Recreation
		Ac.	Ac.	Ac.	Ac.	Ac.	Sq. Ft.	Sq. Ft.	Sq. Ft.	Sq. Ft.	Sq. Ft.	Sq. Ft.	DU	Beds	Sq. Ft.	Ac.
1	North Light Industry	192	192			29	170,700	663,100		56,600		42,100	80		16,200	
2	Neighbor-hood Center	85	85									5,000	83	45	131,200	0
3	Mixed-Use: Office/Lt. Industry	111	111				0			360,000						0
4	Historic District	47	47									5,000	25	257	30,100	7
5	Heavy Industry	119	112	7			119,500		805,400							
6	Farragut Village	107	92		15							40,000	222			
7	Developed Recreation	48	12		36											48
8	Coral Sea Village	70	70									27,100	230			
9	Education/ Office	101	80	21			193,800			113,000	457,500	1,500	50	300		
10	Retail/ Residential	94	78	16		9						0	0			
11	Golf Course	172	172												3,000	172
12	Regional Park	172	161	1	10	11							6		1,250	0
13	Open Space/ Recreation	92			92											92
Other Reuse Areas	Wetlands & Submerged Land	2,865	80		2,785	32										
Other Reuse Areas	Dredge Disposal	922	69	162	691											
Other Reuse Areas	Roosevelt Terrace	29	29										300			
Other Reuse Areas	Main Gate & Rail Spur	26	26							26,200						
	Totals	5,252	1,416	207	3,629	81	484,000	663,100	805,400	555,800	457,500	120,700	996	602	181,750	319

[1]Table presents land use quantities at plan buildout, including existing facilities and new development.

Ac. = Acres
Sq. Ft. = Square Feet
DU = Dwelling Units

[2]Exact acreages will be determined by survey prior to conveyance.
[3]Acreages for the Federal transfers are approximate and have been rounded to the nearest acre.

Source: Vallejo 1994c; US Navy 1998

Reuse Area 2. Neighborhood Center (85 Acres)

The concept for this area is as a mixed-use center providing community and social services. Some reuse of existing residential buildings would occur. Similar to the Reuse Plan Alternative, this area would be the civic and community core centered on the Rodman Theater and other facilities, such as the gymnasium, community social services, police facilities, child care center, and Mariner Park. Approximately 43 units of live/work housing would be constructed. The Rodman Theater and Field House recreational complexes would continue to be used, and Building 637, which houses the locomotive and repair shop, would remain. Retail services currently provided by the Commissary and Base Exchange would be replaced by new businesses located closer to the residential areas, consistent with the Reuse Plan Alternative.

Minimal new development would occur under this alternative, and the PWC maintenance facilities would not be removed, as identified under the Reuse Plan Alternative. Additionally, recreational facilities in the vicinity of Morton Field would not be expanded to include ballfields and soccer fields, and the existing parking area north of A Street would not be converted to developed recreation fields. The 234,300 square feet of office and most of the 40,000 square feet of retail reuse envisioned under the Reuse Plan Alternative would not be implemented under this alternative. Approximately 5,000 square feet of retail space would be implemented.

Reuse Area 3. Mixed Use Office/Light Industry (111 Acres)

The orientation of this area on the waterfront, as recommended under the Reuse Plan Alternative, would not change under this alternative. The primary differences would be the level of reuse that would occur under this alternative, as compared with the Reuse Plan Alternative. For example, the 690,000 square feet of light industrial facilities and construction of the waterfront promenade included in this area in the Reuse Plan Alternative would not be implemented under this alternative. Additionally, office reuse under this alternative would be approximately 360,000 square feet; about 72,000 square feet less than under the Reuse Plan Alternative. Extending the street grid network to the edge of the water and recommended reuses would be consistent with the Reuse Plan Alternative. Loft spaces could be created under this alternative, as under the Reuse Plan Alternative.

Reuse Area 4. Historic District (47 Acres)

Under this alternative, the historic district would be reused as described under the Reuse Plan Alternative. The reuse area would be composed of two elements, the dry dock area along the waterfront and Captain's Row/Alden Park. The St. Peter's chapel and the botanical garden in Alden Park would be

turned into visitor attractions. A historic district seaport overlay zone would be proposed for maintenance of historic vessels, training for ship restoration, and preserving the history of naval ship-building on the west coast. The historic district could be operated by the Mare Island Historic Park Foundation or other qualified sponsor and would allow for private companies to operate in historical buildings subject to preservation regulations. Similar to the Reuse Plan Alternative, the 21 historic residences could be made available for sale as private residences, guest lodgings, or for profit and nonprofit offices.

Limitations on vehicular circulation and parking within the historic district and inclusion of remote parking or shuttle service would be recommended under this alternative, as under the Reuse Plan Alternative. Ferry service from the Vallejo Ferry Terminal across the river also would be recommended. Pedestrian and bicycle links from the historic district to surrounding residential and open space areas would be developed, similar to the Reuse Plan Alternative.

Reuse Area 5. Heavy Industry (119 Acres)

Under this alternative, as under the Reuse Plan Alternative, reuse of existing structures to manufacture large goods, such as ships or rail cars, would not be likely. Manufacturing of smaller items would be considered more likely in this reuse area. The reuse of heavy industrial structures would total about 805,400 square feet, about 128,900 square feet less than under the Reuse Plan Alternative; reuse of light industrial structures would total about 119,500 square feet, about 300,000 square feet less than under the Reuse Plan Alternative. Approximately 7 acres will be transferred to the US Army as described under the Reuse Plan.

Retention of the existing elaborate infrastructure system that was developed to support shipbuilding activities and that includes highly specialized utilities (see Section 3.12 of this document) is recommended under this alternative, as under the Reuse Plan Alternative. Maintenance of the heavy rail lines serving the area would continue, as described in the Reuse Plan Alternative. Many of the historic buildings and landmarks also would be preserved. The transportation improvements recommended under the Reuse Plan Alternative also would occur. Parking needs would be substantially less under this alternative, eliminating the need to demolish buildings to create parking space. However, buildings 617, 621, and 675 would be demolished under this alternative, as described in the Reuse Plan Alternative.

Reuse Area 6. Farragut Village (107 Acres)

Residential use of this area would be the same under this alternative as under the Reuse Plan Alternative. Residential and retail structures would be built between 5th and 3rd Streets. Since the PWC complex buildings in the adjacent area would not be removed under the Medium Density Alternative, the land uses between Farragut Village and the Neighborhood Center Reuse Area would not be integrated. As indicated under the Reuse Plan Alternative, the VUSD would assume control of and continue to operate the elementary school and adjacent playgrounds. Approximately 30 duplex housing units, or approximately 15 acres, are located on state reversionary land. Potential use of the reversionary property is discussed in Section 5.5, Cumulative Impacts.

Reuse Area 7. Developed Recreation (48 Acres)

Under this alternative, in contrast to the Reuse Plan Alternative, the rifle range would remain in its current location indefinitely. Pending development of a plan and acquisition of financing, the range could be moved to another part of the island at some future date. However, since this plan has not yet been developed, for the purposes of this analysis, it is assumed that the rifle range would remain at its current location. A large portion of the rifle range is located on the 36 acres of state reversionary property, and the operators of the range would need to negotiate with the state for continued access to property on state land. Potential land uses on reversionary land are discussed in Section 5.5., Cumulative Impacts.

Reuse Area 8. Coral Sea Village (70 Acres)

Residential use of this area would be the same as that proposed by the Reuse Plan Alternative, with the Marine Barracks and other smaller multifamily housing units converted to market rate apartments or condominiums. No live/work units would be developed. Developing the parade ground for recreational purposes, as described under the Reuse Plan Alternative, would not occur under this alternative.

Reuse Area 9. Education/Office (101 Acres)

The existing buildings would continue to be used for education, as envisioned under the reuse plan. Education uses could include evaluation of hazardous materials remediation techniques, vocational training, wetlands research, and other educational curricula, as described under the Reuse Plan Alternative. This alternative would include about 193,800 square feet of light industrial structures, about half the square footage included in the Reuse Plan Alternative. Approximately 8 acres would be transferred to the US Forest Service and approximately 13 acres would be transferred to the US Army as

described under the Reuse Plan Alternative. The reuse of Federal transfer property is discussed in Section 5.5, Cumulative Impacts.

Reuse Area 10. Retail/Residential (94 Acres)

In contrast to the Reuse Plan Alternative, this reuse area would not be developed under this alternative. There would be no reuse, demolition or retail/residential development activities in this reuse area and the southern crossing bridge across Mare Island Strait would not be constructed. Consistent with the other reuse alternatives, a 9-acre wetland area along the eastern edge of the reuse area would be covered by a conservation easement and would not be developed (see Figure 2-2). Approximately 16 acres are being transferred to the US Army as described under the Reuse Plan Alternative.

Reuse Area 11. Golf Course (172 Acres)

Under this alternative, as with the Reuse Plan Alternative, the 9-hole golf course on the northern flank of the hill at the southern end of the island would be expanded to 18 holes, with commensurate expansion of the clubhouse and parking facilities.

Reuse Area 12. Regional Park (172 Acres)

As described under the Reuse Plan Alternative, the 172-acre regional park would be developed under this alternative and would include recreation activities, such as walking, cycling, and equestrian trails that are linked to other areas, particularly the wetland/dredge pond system (on state reversionary land) and a waterfront promenade. Access to the shoreline for hiking and cycling and to the piers for fishing would be provided, as under the Reuse Plan Alternative. The existing equestrian facility in the wetland/dredge pond area could be relocated to the regional park, as under the Reuse Plan Alternative. The cemetery would be retained as a historic cemetery. In contrast to the Reuse Plan Alternative, the rifle range would not be relocated from its existing location in Reuse Area 7 to the regional park. Approximately 1 acre is being transferred to the US Coast Guard as described under the Reuse Plan Alternative.

Reuse Area 13. Open Space/Recreation (92 Acres)

Under this Alternative as with the Reuse Plan Alternative, this area would be developed for recreation or open space use. However, because all of this area is located on state reversionary land, its potential reuse is addressed in Section 5.5, Cumulative Impacts.

Wetlands, Submerged Lands and Dredge Disposal Areas (3,787 Acres)

Implementing the reuse concepts for the 3,787-acre wetlands and dredge pond area described under the Reuse Plan Alternative also would occur under this alternative. Dredge disposal lands would continue to be used and inactive ponds could be reactivated. A 32-acre conservation easement in a former dredge pond area would be established. Transfer of approximately 162 acres to the USFWS would occur as described for the Reuse Plan Alternative. Reuse actions proposed for this area, comprised mostly of state reversionary land and land subject to Federal agency transfer, are described as cumulative projects in Section 5.5, Cumulative Impacts.

2.4.2 Off-Island Properties

Main Entrance

Under this alternative, as under the Reuse Plan Alternative, Building 513 would be converted to retail or professional office space, with the parking area upgraded to accommodate the change in use. The recent realignment of Mare Island Way and Wilson Avenue by Vallejo does not affect the reuse of Building 513. The Causeway would continue to be used as the primary access route to and from Mare Island.

Roosevelt Terrace

Under this alternative, as under the Reuse Plan Alternative, up to half of the existing Roosevelt Terrace buildings would be removed to provide space for landscaping, recreational areas, and additional parking. Remodeling and reuse of the remaining buildings for approximately 300 affordable housing apartments is proposed under this alternative, consistent with the Reuse Plan Alternative.

Railroad Spur

Under this alternative, as under the Reuse Plan Alternative, the railroad spur from Mare Island to the California Northern Railroad, just north of the intersection of Sereno Drive and Broadway in northern Vallejo, would continue to be used to support on-island activities requiring rail service.

2.4.3 Transportation Improvements

The following narrative summarizes the transportation-related improvements proposed to serve the reuse activities on Mare Island under the Medium Density Alternative.

On-Island Roadways

Under the Medium Density Alternative, 18 miles of streets would be improved, 7 miles of road would be constructed, and 8 intersections would be signalized. New and upgraded collectors and arterials would be constructed with bike lanes, and all new or upgraded streets would have curbs, gutters and sidewalks. Crosswalks would be provided at all intersections and at mid-block where needed. All signalized intersections would have pedestrian and bicycle-activated signals. Table 2-5 lists the circulation system improvements that would occur as part of the Medium Density Alternative. These improvements would not include the extensive development of parking lots, construction of the southern crossing and construction of the number of new traffic signals envisioned under the Reuse Plan Alternative. Figure 2-4 illustrates the location of these improvements. Implementing the improvements listed on Table 2-5 and shown on Figure 2-4 would mitigate any impacts of this alternative on Mare Island roadways and parking.

Transit Service

Under the Medium Density Alternative, ferry service to and from the island would be established. Transit service to the island also would be provided with commensurate modifications to provide bus pullouts, shelters, and benches at transit stops.

Bicycle and Pedestrian Facilities

The Medium Density Alternative would provide the same facilities as those described for the Reuse Plan Alternative (see Figure G-7 and Table G-4). A waterfront promenade would be developed with pedestrian linkages to various reuse areas, and pedestrian circulation would be established along Railroad Avenue and the waterfront promenade. The bicycle and pedestrian system would include the pedestrian-bicycle corridor along Walnut Avenue identified in the Reuse Plan Alternative.

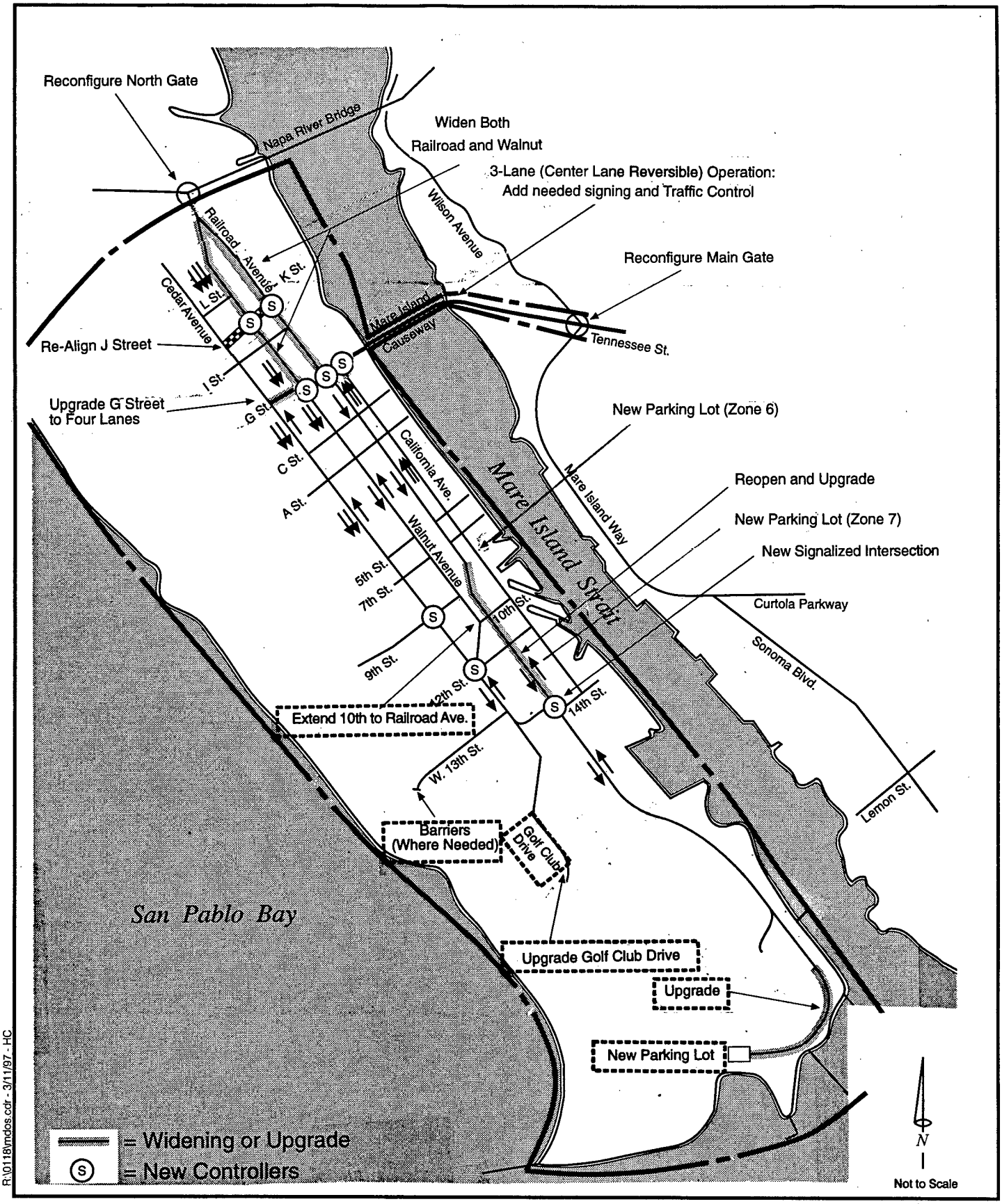
2.4.4 Sensitive Resource Conservation Measures

Consistent with the Reuse Plan Alternative, Vallejo and the Navy will implement specific measures for endangered and threatened species protection and management (See Appendix F). The Medium Density Alternative also incorporates conservation easements on Federal surplus property (see Figures 1-5, 2-2 and Table 2-4) for the protection of endangered and sensitive species habitat that will be conveyed with the property. Measures provided in the Memorandum of Agreement to protect cultural resources on Mare Island have also been incorporated into this alternative.

TABLE 2-5
MARE ISLAND STREET SYSTEM IMPROVEMENTS
MEDIUM DENSITY AND OPEN SPACE ALTERNATIVES

Facility	Improvement Description
Mare Island Arterials and Collectors	Provide new traffic control and informational signs
North Access	Reconfigure approach to north entrance to include 3 inbound lanes and 3 outbound lanes (see Figure G-4)
Mare Island Causeway/G Street	Retain 3-lane reversible operation (see Figure G-3)
New Signal Controllers (4)	Replace existing signal controllers
Railroad Avenue	Extend Railroad Avenue from 8th Street to 14th Street as a primary arterial and widen to 3 lanes plus bike lanes, parking, and curb and gutter from the north gate to 14th Street
Railroad Avenue at 14th Street	Construct new traffic signal when warrants are met
Railroad Avenue	Upgrade Railroad Avenue from the former Coast Guard Station to proposed public fishing pier
Tenth Street	Extend Tenth Street from Walnut Avenue to Railroad Avenue to provide access to planned industrial area
Minor Streets	Close substandard streets that are not planned for future use
Public Fishing Pier	Construct public parking lot near fishing pier
Existing Parking Lots (Reuse Areas 1-10)	Upgrade signing and striping at existing parking lots
Walnut Avenue	Widen to 3 lanes plus bike lanes, parking, and curb and gutter from the north gate to G Street
Railroad Avenue at J Street	Construct new traffic signal when warrants are met
Walnut Avenue at J Street	Construct new traffic signal when warrants are met
J Street	Realign and construct 2 lanes between Walnut Avenue and Cedar Avenue
G Street	Upgrade G Street to include 4 12' lanes between Mare Island Causeway and Cedar Avenue (see Figure G-2)
Club Drive	Upgrade Club Drive to include 2 12' lanes from Cedar Avenue to Sargo
Local Service Roads (Reuse Areas 1, 3, 4, 7 and 9)	Assumes the need to construct 4.2 miles of new collectors
Existing Parking Lots (Reuse Areas 1-10)	Upgrade signing and striping at existing parking lots
New Parking Lots (Reuse Areas 6)	Construct 180 new surface parking spaces
New Parking Lots (Reuse Areas 7)	Construct 170 new surface parking spaces

Source: Vallejo 1994c, as amended by Crane Transportation Group



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Roadway improvements without the Southern crossing.

LEGEND:

Recommended Improvements

Mare Island Naval Shipyard Property Boundaries

Source: Vallejo, 1994c

Medium Density and Open Space Alternatives: Street System Improvements

Mare Island, California

Figure 2-4

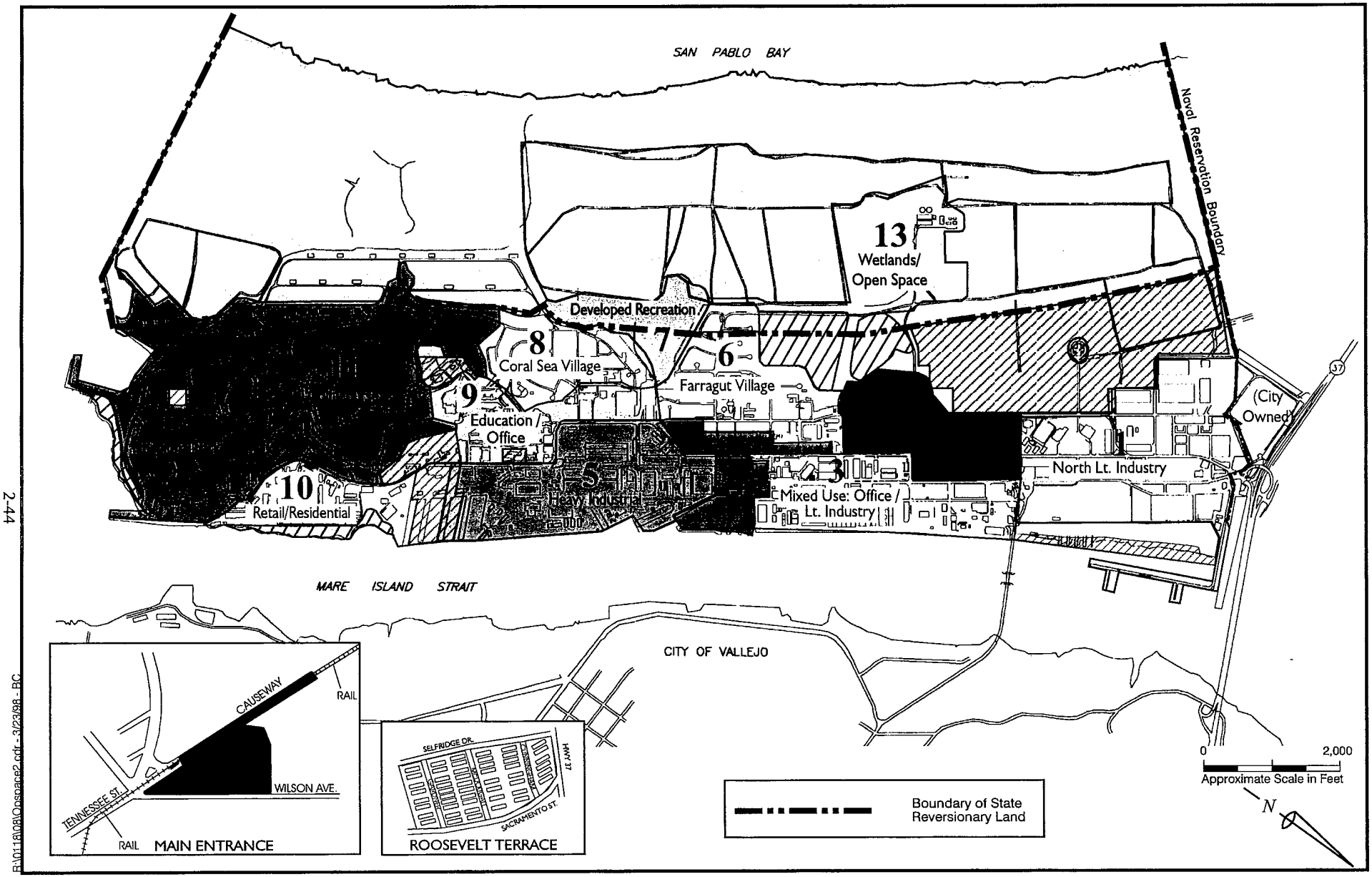
2.5 OPEN SPACE ALTERNATIVE

The Open Space Alternative is the CEQA Environmentally Superior Alternative. Because the overall development density under this alternative would be lower than the other reuse alternatives, there would be less pressure on both natural and built environments. As with the Reuse Plan Alternative, this alternative includes the entire property at Mare Island and the off-island sites. As with the Reuse Plan Alternative, the potential reuse of reversionary land and land subject to Federal agency transfer is considered in Section 5.5, Cumulative Impacts.

The most substantial differences between this alternative and the other reuse alternatives would be the designation of the golf course, rifle range and Reuse Area 13 as open space and lesser density redevelopment of Reuse Areas 2, 3, 5, and 6. No multi-family residential and commercial/industrial structures would be constructed under this alternative; rather, existing facilities would be converted or remodeled. Under this alternative, the regional park would be expanded to 344 acres, compared to 172 acres under the Reuse Plan and Medium Density Alternatives. Figure 2-5 illustrates the boundaries of the reuse areas under the Open Space Alternative. Locations of the conservation easements are also indicated on the figure. Densities and acreages by reuse area including areas on state reversionary land and Federal agency transfer land are shown on Table 2-6.

Consistent with the Medium Density Alternative, the southern crossing linking Vallejo and Mare Island would not be constructed under this alternative. Reuse Areas 1, 4, 8, 9, and all of the off-island properties (Main Entrance, Roosevelt Terrace, and railroad spur) would be developed at the same density as that identified for Medium Density Alternatives. Street and signalization improvements and abandonment or upgrade of utilities would be the same as those described for the Medium Density Alternative.

Approximately 2.45 million square feet of nonresidential space (excluding civic/recreation space) and 843 residential units would be in use on and off the island under this alternative, a 5 and 11 percent reduction, respectively, compared with the Medium Density Alternative. Under this alternative, the population of Mare Island would be approximately 2,703, including residents of Roosevelt Terrace; projected employment would be approximately 4,804.



2-44

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Under this alternative the rifle range and golf course would be removed and the dredge disposal areas would revert to wetlands.

LEGEND:

- 1 Reuse Area
- Residential
- Commercial
- Historic
- Federal Transfer Lands
- No Planned Reuse
- Institutional
- Light Industrial
- Heavy Industrial
- Developed Recreation
- Recreation/Open Space
- Wetlands/Open Space
- Conservation Easements

Open Space Alternative

Marc Island, California

Figure 2-5

Developed by: Tetra Tech, 1995

TABLE 2-6
OPEN SPACE ALTERNATIVE (YEAR 2020)
ESTIMATED LAND USE[1]

	Reuse Areas	Total Area	Disposition			Land Use										
			Surplus Land[2]	Federal Transfer[3]	State Reversionary	Conservation Easement	Light Industry	Warehouse	Heavy Industry	Office	Education/Office	Retail	Residential	Dormitory	Civic/Recreation	Developed Recreation
		Ac.	Ac.	Ac.	Ac.	Ac.	Sq. Ft.	Sq. Ft.	Sq. Ft.	Sq. Ft.	Sq. Ft.	Sq. Ft.	DU	Beds	Sq. Ft.	Ac.
1	North Light Industry	192	192			29	170,700	663,100		56,600		42,100	80		16,200	
2	Neighbor-hood Center	85	85									5,000	0	0	72,000	0
3	Mixed-Use: Office/Lt. Industry	111	111				0			282,700						0
4	Historic District	47	47									5,000	25	257	30,100	7
5	Heavy Industry	119	112	7			119,500		700,000							
6	Farragut Village	107	92		15							40,000	152			
7	Developed Recreation	48	12		36											48
8	Coral Sea Village	70	70									27,100	230			
9	Education/ Office	101	80	21			193,800			113,000	457,500	1,500	50	300		
10	Retail/ Residential	94	78	16		9						0	0			
11	Golf Course	0													0	0
12	Regional Park	344	333	1	10	11							6		0	0
13	Open Space/ Recreation	0		0											0	0
Other Reuse Areas	Wetlands & Submerged Land	3,879	149	162	3,568	32										
Other Reuse Areas	Dredge Disposal	0														
Other Reuse Areas	Roosevelt Terrace	29	29										300			
Other Reuse Areas	Main Gate & Rail Spur	26	26							26,200						
	Totals	5,252	1,416	207	3,629	81	484,000	663,100	700,000	478,500	457,500	120,700	843	557	118,300	55

[1]Table presents land use quantities at plan buildout, including existing facilities and new development.

Ac. = Acres
Sq. Ft. = Square Feet
DU = Dwelling Units

[2]Exact acreages will be determined by survey prior to conveyance.
[3]Acreages for the Federal transfers are approximate and have been rounded to the nearest acre.

Source: Vallejo 1994c; US Navy 1998

2.5.1 On-Island Reuse Areas

Reuse Area 1. North Light Industry (192 Acres)

Under this alternative the overall concept for the area would not change from that identified for the Reuse Plan Alternative and Medium Density Alternative. Recommendations regarding moving existing ballfields, converting the commissary and Navy Exchange buildings, as recommended under the Reuse Plan Alternative and Medium Density Alternative, also would be included as part of this alternative. Dormitories could be reused as indicated in the reuse plan. The amount of light industry and warehouse space recommended for reuse under this alternative would be the same as under the Medium Density Alternative, approximately 1 million square feet less than under the Reuse Plan Alternative (reduced from 1.85 million square feet to about 0.83 million square feet). The 29-acre wetland area east of the reuse area would be protected by a conservation easement and would not be developed. The pier at the far northern end of the island, on state reversionary submerged land, would be used for public recreation, such as fishing.

Reuse Area 2. Neighborhood Center (85 Acres)

This alternative would provide the civic and community core-centered uses in the Rodman Theater and other facilities, such as the gymnasium, community social services, child care center, and Mariner Park and is similar to the Medium Density Alternative. No live/work units would be developed. The Rodman Theater and Field House recreational complexes would continue to be used, and Building 637, which houses the locomotive and repair shop, would remain. The 131,200 square feet of civic/recreation proposed under the Medium Density Alternative would be reduced to 72,000 square feet under this alternative. Retail services would be provided, consistent with the Medium Density Alternative.

As with the Medium Density Alternative, the PWC maintenance facilities would not be removed under this alternative. Additionally, recreational facilities in the vicinity of Morton Field would not be expanded to include ballfields and soccer fields, and the parking area north of A Street would not be converted to recreation fields. The residential uses identified under the Reuse Plan Alternative and Medium Density Alternative would not occur under this alternative.

Reuse Area 3. Mixed Use Office/Light Industry (111 Acres)

The orientation of this area on the waterfront, as recommended under the Reuse Plan Alternative and Medium Density Alternative, would not change under this alternative. Extending the street grid network and other

recommended reuses, including creating loft spaces, would be consistent with the Medium Density Alternative.

The primary difference between this alternative and the Reuse Plan Alternative and Medium Density Alternative would be in the amount of office space reuse that there would be under this alternative. This alternative's 282,700 square feet of office reuse would be approximately 149,300 square feet less than under the Reuse Plan Alternative and about 77,700 square feet less than under the Medium Density Alternative. As under the Medium Density Alternative, there would be no development of light industrial uses.

Reuse Area 4. Historic District (47 Acres)

Under this alternative, reuse of this area would occur as described under the Reuse Plan Alternative and Medium Density Alternative. The reuse area would be composed of 2 components identified previously. St. Peter's Chapel and the botanical garden in Alden Park would be turned into visitor attractions, and a historic district seaport overlay zone would allow for maintenance of historic vessels, training for ship restoration, and preserving the shipyard's shipbuilding history. Consistent with the Reuse Plan Alternative and Medium Density Alternative, this reuse area would be operated by the Mare Island Historic Park Foundation or other qualified sponsor and would allow private companies to operate in historical buildings, subject to preservation guidelines. Additionally, historic residences could be made available for sale as private residences, guest lodgings, or for profit and nonprofit offices.

Limiting vehicular circulation and parking in this area and including remote parking or shuttle service would be recommended under this alternative, as under the Reuse Plan Alternative and Medium Density Alternative. Ferry service from the Vallejo Ferry Terminal across Mare Island Strait also would be included. Pedestrian and bicycle links from the historic district to surrounding residential and open space areas would be developed, as under the Reuse Plan Alternative and Medium Density Alternative.

Reuse Area 5. Heavy Industry (119 Acres)

As under the Reuse Plan Alternative and Medium Density Alternative, reuse of existing structures to manufacture large goods, such as ships or rail cars, would not be considered a strong potentiality. Manufacturing of smaller items would be considered more likely to occur in this reuse area. Under this alternative, reuse of heavy industrial structures would be approximately 700,000 square feet, about 105,400 less than the Medium Density Alternative and 234,300 square feet less than under the Reuse Plan Alternative. Reuse of approximately 119,500 square feet of light industrial structures would be the

same as for the Medium Density Alternative (300,000 square feet less than under the Reuse Plan Alternative). No other reuse activities are identified for this land use area. Buildings 617, 621, and 675 would be demolished under this alternative, as described under the Reuse Plan Alternative. Approximately 7 acres will be transferred to the US Army as described under the Reuse Plan Alternative.

Retaining the existing elaborate infrastructure system developed to support shipbuilding activities, including highly specialized utilities (see Section 3.12 of this document), is recommended under this alternative, as under the Reuse Plan Alternative and Medium Density Alternative. Maintenance of the heavy rail lines serving the area would continue, as described in the Reuse Plan Alternative. Consistent with the Reuse Plan Alternative and Medium Density Alternative, many of the historic buildings and landmarks in this reuse area would be preserved. The general transportation improvements recommended under the Reuse Plan Alternative and Medium Density Alternative would occur under this alternative. However, parking needs would be substantially less eliminating the need to demolish buildings to create parking space.

Reuse Area 6. Farragut Village (107 Acres)

Residential use of the surplus portion of this planning area would be reduced from 220 units under the Reuse Plan Alternative and Medium Density Alternative to 152 units under this alternative. Retail facilities would be constructed on the surplus land. The VUSD would control and continue to operate the elementary school and adjacent playgrounds. Consistent with the Medium Density Alternative, the PWC complex buildings would not be removed under this alternative.

Reuse Area 7. Developed Recreation (48 Acres)

The rifle range would be removed from the shipyard and would be replaced with developed recreation uses, such as ballfields, play areas and picnic areas under the Open Space Alternative. This contrasts with the Reuse Plan Alternative's recommendation to move the rifle range to Reuse Area 12 and the Medium Density Alternative's recommendation to keep the rifle range at its current location.

Reuse Area 8. Coral Sea Village (70 Acres)

Retail and residential use of this area under this alternative would be the same as that described under the Medium Density Alternative, with the Marine Barracks and other smaller multifamily housing units converted to market rate apartment units or condominiums. As with the Medium Density Alternative,

live/work units would not be developed. Development of the parade ground for recreational purposes would not occur under the Open Space Alternative.

Reuse Area 9. Education/Office (101 Acres)

The existing buildings would continue to be used for education under this alternative, as identified for the Reuse Plan Alternative and Medium Density Alternative. As with the Medium Density Alternative, reuse of light industrial structures would occupy approximately 193,800 square feet, about half the square footage proposed under the Reuse Plan Alternative. Office, education, retail, residential, and dormitory reuses would be the same as under the Reuse Plan Alternative. The Federal transfer to the US Forest Service and US Army would be the same as described under the Reuse Plan Alternative.

Reuse Area 10. Retail/Residential (94 Acres)

As with the Medium Density Alternative, this area would not be developed. There would be no reuse or demolition in this reuse area under this alternative. There would be no residential or retail construction. The southern crossing of Mare Island Strait would not be constructed. The 9-acre wetland area along the eastern edge of the reuse area would be covered by a conservation easement, and would not be developed.

Reuse Area 11. Golf Course (0 Acres)

The 172-acre expansion of the existing golf course, as described under the Reuse Plan Alternative and Medium Density Alternative, would not be implemented under this alternative. Instead, the golf course and adjacent expansion area would become an essentially undeveloped part of the proposed regional park (see Reuse Area 12).

Reuse Area 12. Regional Park (344 Acres)

The regional park, as described under the Reuse Plan Alternative and Medium Density Alternative, would be developed under this alternative but would include the 172-acre area proposed for a golf course under the other alternatives. Recreation activities, such as walking, cycling, and horseback riding, could be expanded to include the former golf course land. Access would be provided to the shoreline for hiking and cycling and to the piers for fishing, and the existing equestrian facility in the wetland/dredge disposal area could be relocated to the regional park, as under the Reuse Plan Alternative and Medium Density Alternative. The cemetery would continue to be maintained as a historic cemetery. An approximately 1-acre parcel would be transferred to the US Coast Guard.

Reuse Area 13. Open Space/Recreation (0 Acres)

In contrast to the Reuse Plan and Medium Density Alternatives, there would be no development in this reuse area under this alternative. There would be no consideration of a sports complex or development as recreational open space. Instead, it would become undeveloped open space and its acreage has been included as part of wetland acreage below. Since this area is located entirely on state reversionary land, any future use would need to be negotiated with the State of California. Use of state reversionary land is considered as a cumulative project in Section 5.5, Cumulative Impacts.

Wetlands and Submerged Lands (3,879 Acres)

Continued use of the dredge disposal areas, as proposed under the other reuse alternatives would not occur under the Open Space Alternative. Instead the 922 acres of dredge disposal areas would be allowed to revert back to wetland habitat. In addition, the 92 acres of Reuse Area 13 proposed for Recreation/Open Space under the other reuse alternatives would be combined with this wetland/open space area. As with the other reuse alternatives, transfer of approximately 162 acres to the USFWS would take place. A 32-acre conservation easement would also be established in this area adjacent to the USFWS area, for protection of endangered species habitat.

Implementing the reuse concepts for the wetlands and dredge disposal areas, located on state reversionary land, and for those lands being transferred to another Federal agency are discussed in Section 5.5, Cumulative Impacts.

2.5.2 Off-Island Properties

Main Entrance

Under this alternative, as under the Reuse Plan Alternative and Medium Density Alternative, Building 513 would be converted to retail or professional office space, with the parking area upgraded to accommodate the change in use. The recent realignment of Mare Island Way and Wilson Avenue and the redesign of the gate, by Vallejo, does not affect the reuse of Building 513. The Causeway would continue to provide the primary access to and from Mare Island.

Roosevelt Terrace

As under the Reuse Plan Alternative and Medium Density Alternatives, up to half of the existing Roosevelt Terrace buildings would be removed to provide space for landscaping, recreational areas, and additional parking. Remodeling

and reuse of the remaining buildings for approximately 300 affordable housing apartments is proposed under this alternative.

Railroad Spur

As under the Reuse Plan Alternative and Medium Density Alternative, the railroad spur from Mare Island to the California Northern Railroad just north of the intersection of Sereno Drive and Broadway in northern Vallejo would continue to serve on-island uses needing rail service.

2.5.3 Transportation Improvements

The following narrative summarizes the transportation-related improvements proposed to serve the reuse activities on Mare Island under the Open Space Alternative. The improvements would be the same as those described in the Medium Density Alternative.

On-Island Roadways

Under the Open Space Alternative, 18 miles of streets would be improved, 7 miles of road would be constructed, and 8 intersections would be signalized. New and upgraded collectors and arterials would be constructed with bike lanes, and all new or upgraded streets would have curbs, gutters and sidewalks. Crosswalks would be provided at all intersections and at mid-block where needed. All signalized intersections would have pedestrian and bicycle-activated signals. Table 2-5 lists the circulation system improvements that would occur as part of the Open Space Alternative. Figure 2-4 illustrates the location of these improvements. Implementing the improvements listed on Table 2-5 and shown on Figure 2-4 would mitigate any impacts of this alternative on Mare Island roadways and parking.

Transit Service

Ferry service would be established under this alternative as described for the Reuse Plan Alternative. Transit service to the island also would be provided with commensurate modifications to provide bus pullouts, shelters, and benches at transit stops.

Bicycle and Pedestrian Facilities

The Open Space Alternative would provide the same bicycle and pedestrian facilities as those described for the Reuse Plan Alternative (see Table G-4 and Figure G-7). A waterfront promenade would be developed between Reuse Areas 1 and 10 with pedestrian linkages to various reuse areas, and pedestrian circulation would be established along Railroad Avenue. The bicycle and

pedestrian system would include the pedestrian-bicycle corridor along Walnut Avenue identified under the Reuse Plan Alternative.

2.5.4 Sensitive Resource Conservation Measures

Consistent with the Reuse Plan Alternative, Vallejo and the Navy will implement specific measures for endangered and threatened species protection and management (See Appendix F). The Open Space Alternative also incorporates conservation easements on Federal surplus property (see Figures-1-5, 2-5 and Table 2-6) intended to protect endangered and sensitive species habitat, that will be conveyed with the property. Measures provided in the Memorandum of Agreement to protect cultural resources on Mare Island have also been incorporated into this alternative.

2.6 NO ACTION ALTERNATIVE

The No Action Alternative is the NEPA environmentally preferable alternative because environmental impacts would be substantially reduced under this alternative. Inclusion of the No Action Alternative in the environmental analysis and documentation is required by CEQ, which implements NEPA. It also fulfills the requirement of CEQA that a "no project" alternative be evaluated. The No Action Alternative evaluates the facility closed but remaining in Federal ownership.

A No Action Alternative of Navy property disposal to Vallejo or other non-Federal entity with no subsequent community reuse would have the same environmental impacts as the Navy No Action Caretaker Alternative. The primary difference between these two actions would be that the new owner, rather than the Navy, would be responsible for providing caretaker services. The project objective, costs, and jurisdictional responsibilities would therefore differ administratively from Navy caretaker status, but the site would be in an equivalent status for CEQA purposes, and impacts would be the same as projected under the No Action Alternative.

Limited interim leasing of facilities has occurred at Mare Island since closure of the shipyard in April 1996. Interim leases have been limited to those which represent no substantial change in past use or use intensity. A list of current lease tenants is included in Appendix K. With the exception of 1 lease which expires in the year 2010, all existing lease agreements with individual tenants expire by the end of year 2001. Under the No Action Alternative, the Navy would not continue interim leasing indefinitely. By the buildout year 2020, Navy interim leases would have expired and on-site activity would be limited to essential caretaker actions.

Under the No Action Alternative, all Federal agency property transfers would occur and reversionary land would revert to the State of California. Uses of the dredge disposal and wetland areas would be determined by the State Lands Commission. On-site activities associated with Navy caretaker status could include the following:

- Maintaining surplus property at Mare Island in a caretaker or inactive status, under Navy control.
- Implementing a predator management plan not to exceed 20 hours per week of field effort as per the Biological Opinion (Appendix F).
- Implementing a public access management plan as per the Biological Opinion (Appendix F).
- Inspecting and maintaining utility systems when necessary to protect public health, the environment and public safety.
- Periodically maintaining landscaping around unoccupied structures, as necessary, to protect the structures from fires or nuisance conditions.
- Continuing security patrols to prevent unauthorized entry.
- Continuing land management programs, such as natural resource management, pest control, erosion control, and tree removal.
- Minimally maintaining structures and other facilities in such a manner as to facilitate interim leasing or economical resumption of use.
- Minimally maintaining existing roadways.
- Continuing site contamination clean-up activities.

The No Action Alternative assumes a caretaker workforce of approximately 80 employees, including approximately 30 caretaker and 50 fire/security environmental management staff. Caretaker personnel would be affiliated with Vallejo, contractors or the Navy. The level of Navy caretaker staffing would be adjusted over time to reflect the level of Navy responsibility at Mare Island. Approximately 250 additional workers would be temporarily located on Mare Island in the early years of the caretaker period as a part of environmental cleanup activities.

2.7 COMPARISON OF ALTERNATIVES

Table 2-9 at the end of this chapter lists the significant impacts and corresponding mitigation measures for each EIS/EIR alternative. Table 2-9 may be used to compare the potential impacts of one alternative to those of another. For purposes of Navy NEPA analysis, direct environmental impacts are associated with Navy disposal of surplus property and the No Action Alternative, and indirect impacts are those associated with community reuse of surplus land.

2.8 ENVIRONMENTALLY PREFERABLE/ENVIRONMENTALLY SUPERIOR ALTERNATIVE

NEPA requires that an environmentally preferable alternative be identified and CEQA requires that an environmentally superior alternative be identified. The No Action Alternative is the environmentally preferable alternative and environmentally superior alternative because no significant impacts would occur under this alternative. However, the No Action Alternative would not allow the City of Vallejo to generate jobs, tax revenues, or other benefits allowed as part of the reuse alternative. Consistent with CEQA requirements, one of the reuse alternatives must further be identified as an environmentally superior alternative. Therefore, the Open Space Alternative is the CEQA environmentally superior alternative because its environmental impacts, when compared to the other reuse alternatives, would occur at reduced levels. The No Action Alternative is the NEPA Environmentally Preferable Alternative.

2.9 ALTERNATIVES ELIMINATED FROM DETAILED REVIEW

Soon after the BRAC Commission recommendation to close Mare Island Naval Shipyard was approved by President Clinton and accepted by the Congress in 1993, Vallejo was recognized by the Department of Defense as the local redevelopment authority (LRA) for the purpose of implementing the DBCRA 1990, Pub. L. 101-510, Title XXIX, 10 U.S.C. §2687 note. In its LRA capacity, Vallejo conducted a comprehensive reuse planning process. Suggestions and proposals for future use of Mare Island properties were directed to the LRA for consideration during its public reuse plan development process.

Reuse options were also identified during the public scoping process and most have been incorporated into one or more of the alternatives analyzed in the EIS/EIR. However, a number of land use alternatives were considered and eliminated during the LRA's redevelopment planning process and therefore were not selected for review in this EIS/EIR. These included a theme park, major hotel/convention center, sports arena, prison, Immigration and Naturalization Service detention facility, wind energy farm, oceanography

institute, and desalination facilities, among others. In addition, reuse alternatives were suggested for the entire site, such as increased residential, commercial, or industrial density. Reasons for rejection of these proposals are outlined below.

2.9.1 Alternative Uses for Partial Use of the Site

Hotel, Theme Park, Sports Arena

Following development of the Conceptual Reuse Plan, Vallejo sponsored a ULI Advisory Services Panel to evaluate reuse opportunities on Mare Island and to determine whether the accepted Conceptual Reuse Plan was responsive to these opportunities. As a result of its evaluation, the panel concluded that certain uses would not be feasible for Mare Island because of the absence of market demand generators for these uses. These included constructing a major hotel, converting to a theme park, and constructing a sports arena (ULI 1994). Based on the LRA's evaluation of the ULI recommendations, these alternatives were eliminated from future detailed review.

Prison

Using a portion of the site as a prison was suggested and was considered by the Vallejo City Council, although a formal request for prison use at Mare Island was not formally requested by the State Department of Corrections. The council took no formal action on this land use, they expressed concerns about the impacts of this land use on economic growth and on the impact such a use could have on potential use of other island sites. While a prison was again suggested by a Vallejo citizen during the public scoping hearing for the EIS/EIR, this alternative was not pursued further, due to the lack of community support and land use compatibility concerns.

INS Detention Facility

In May, 1994, the Immigration and Naturalization Service (INS) indicated an interest in using Buildings M-37, 503, and 601 as a Federal immigration detention facility. After reviewing the request and hearing opinions of citizens, the Vallejo City Council on June 4, 1994, passed Resolution No. 94-263 N.C. opposing the request. The city's opposition to the request was based on the proximity of the site to residences and the impact such a facility would have on future marketing efforts. The INS subsequently withdrew their request in March, 1996. This alternative was not considered further.

Wind Energy Development

A wind energy developer approached the city during reuse plan development regarding a proposal to locate windmills on the island. The proponent also appeared at one of the community reuse forums, and his comments were made available to the Mare Island Futures Project Work Group. However, no details were formally submitted to the city to allow analysis of that proposal in terms of reuse planning. No additional information on wind energy development was provided during the public scoping process for the EIS/EIR.

Other Uses

The oceanography institute, desalination facilities, and certain other proposals were discussed briefly in Futures Group meetings and in the EIS/EIR scoping process. The Reuse Alternatives considered in the EIS/EIR do not preclude such future use of portions of the site; however, alternatives considered in the EIS/EIR focus on the feasible uses most commonly brought up in the public meetings.

2.9.2 Alternative Uses for the Entire Site

During development of the Mare Island Reuse Plan, several reuse alternatives that would have increased densities beyond those projected at full buildout of the reuse plan (year 2020) were excluded from further detailed review. These alternatives proposed increased residential development and increased industrial and commercial development. These alternatives were excluded from further review because of their high infrastructure costs and because marketing forecasts did not indicate a future demand for the increased densities. In addition, these alternatives would not substantially alleviate the physical environmental impacts of the Reuse Plan Alternative and therefore would not meet the intent of alternatives under CEQA. Following is a brief description of the two increased density alternatives, which are eliminated from consideration.

Increased Residential Development. This alternative assumed more of the island would be developed for residential uses, replacing nonresidential uses. Residential units would have been added to the regional park (Reuse Area 12) and the rifle range (Reuse Area 7). The North Light Industry (Reuse Area 1) would be modified to include additional residential and retail uses. The Neighborhood Center (Reuse Area 2) would be modified to increase retail, residential, and light industrial, while decreasing office square footage. Table 2-7 compares the modified densities proposed under this alternative with those indicated for the Reuse Plan Alternative.

TABLE 2-7
COMPARISON OF LAND USE DENSITIES – REUSE PLAN ALTERNATIVE AND INCREASED RESIDENTIAL PROPOSAL

Reuse Area	Reuse Plan Alternative					Increased Residential Development				
	Retail	Residential	Light Industry	Office	Civic/Recreation	Retail	Residential	Light Industry	Office	Civic/Recreation
	Sq. ft.	DU	Sq. ft.	Sq. ft.	Sq. ft.	Sq. ft.	DU	Sq. ft.	Sq. ft.	Sq. ft.
1. North Light Industry	42,100	80	566,000	56,600	16,200	109,000	900			
2. Neighborhood Center	40,000	83	0	234,300	131,200	54,000	375	109,000	72,000	131,200
7. Developed Recreation	0	0	0	0	0		384			
12. Regional Park	0	6	0	0	1,250		114			

Sq. ft. = Square feet
DU = Dwelling Units

Source: City of Vallejo and Tetra Tech 1995

Increased Industrial and Commercial Development. This alternative assumed more of the island would be developed with industrial and commercial uses. The North Light Industry (Reuse Area 1) would be modified to include additional retail, light industrial, and office uses, while decreasing warehouse use. The Neighborhood Center (Reuse Area 2) would be modified to increase retail and residential and to add light industrial uses. The regional park (Reuse Area 12) would be modified to add light industrial uses. Table 2-8 compares the modified densities proposed under this alternative with those indicated for the Reuse Plan Alternative.

TABLE 2-8
COMPARISON OF LAND USE DENSITIES – REUSE PLAN ALTERNATIVE AND INCREASED INDUSTRIAL AND COMMERCIAL PROPERTIES

Reuse Area	Reuse Plan Alternative						Increased Residential Development					
	Retail	Residential	Light Industry	Office	Warehouse	Civic/Recreation	Retail	Residential	Light Industry	Warehouse	Office	Civic/Recreation
	Sq. ft.	DU	Sq. ft.	Sq. ft.	Sq. ft.	Sq. ft.	Sq. ft.	DU	Sq. ft.	Sq. ft.	Sq. ft.	Sq. ft.
1. North Light Industry	42,100	80	566,000	56,600	1,285,100	16,200	109,000		650,000	290,000	109,000	
2. Neighborhood Center	40,000	83	0	234,300	0	131,200	54,000	128	664,000			131,000
12. Regional Park	0	6	0	0	0	1,250			163,000			

Sq. ft. = Square feet
DU = Dwelling Units

Source: City of Vallejo and Tetra Tech 1995

2.10 SUMMARY OF SIGNIFICANT IMPACTS AND MITIGATIONS

Table 2-9 summarizes the significant impacts and mitigations identified for the disposal and community reuse actions. For every resource evaluated in the EIS/EIR, impacts of disposal and of each reuse alternative, including the No Action Alternative, are projected to 2020. Complete implementation of each reuse alternative is assumed in determining impacts. Since publication of the Draft EIS/EIR, previously identified significant impacts have been reduced to nonsignificant levels as a result of agreements reached during the Endangered Species Act and National Historic Preservation Act consultation processes, respectively.

For purposes of Navy NEPA analysis, direct environmental impacts are associated with Navy disposal of surplus property and the No Action Alternative, and indirect impacts are those associated with community reuse of surplus land. Impacts on state reversionary land and on excess land subject to transfer to other Federal agencies are considered to be cumulative impacts and therefore are discussed in Section 5.5 and are not identified in Table 2-9.

The Navy's responsibility for disclosing indirect reuse-related environmental impacts is to address reasonably foreseeable impacts. However, the Navy cannot control reuse after the property is conveyed from Federal ownership and in support of local reuse actions. Therefore, implementation of mitigation measures for reuse-related environmental impacts would be the responsibility of the acquiring entity and not the responsibility of the Navy.

TABLE 2-9
SUMMARY OF SIGNIFICANT ENVIRONMENTAL IMPACTS AND MITIGATIONS FROM THE DISPOSAL AND REUSE ALTERNATIVES[1]

Resource Category	NAVY ACTIONS		REUSE ALTERNATIVES		
	Disposal	No Action Alternative	Reuse Plan Alternative	Medium Density Alternative	Open Space Alternative
Land Use	No direct impacts.	No impacts.	*Impact 1.* A significant and mitigable land use impact would result from developing Reuse Area 10 adjacent to the proposed regional park. Development would replace industrial buildings with residential and retail structures, which would not be consistent with the proposed regional park adjacent to this reuse area. (p. 4-6) *Mitigation 1.* Reduce or change the development in this area to uses more compatible with public open space. (p. 4-7) *Impact 2.* A significant and mitigable land use impact would result from relocating the rifle range from Reuse Area 7 to Reuse Area 12, the proposed regional park. The proposed relocation would conflict with the established and proposed future recreational uses of this area. (p. 4-7) *Mitigation 2.* Remove the rifle range from Mare Island. (p. 4-7)	*Impact 1.* A significant and mitigable land use impact would result from retaining the rifle range at its current location (Reuse Area 7) between 2 areas containing residential units. Retaining the rifle range at this location would not be compatible with the proposed residential uses for these areas. (p. 4-10) *Mitigation 1.* Remove the rifle range. (p. 4-10) *Impact 2.* A significant and mitigable land use impact would result from redevelopment interfering with or removing dredge slurry pipelines, as described for the Reuse Plan Alternative. (p. 4-11) *Mitigation 2.* Design all development plans for Reuse Areas 3, 4, 5, and 12 to allow continued transfer of dredged material to dredge disposal areas, unless use of the dredge disposal areas is terminated. (p. 4-11)	No significant impacts.

[1]Mitigations identified would reduce impacts to a nonsignificant level unless otherwise noted.

TABLE 2-9
SUMMARY OF SIGNIFICANT ENVIRONMENTAL IMPACTS AND MITIGATIONS FROM DISPOSAL AND REUSE ALTERNATIVES *(continued)*

Resource Category	NAVY ACTIONS		REUSE ALTERNATIVES		
	Disposal	No Action Alternative	Reuse Plan Alternative	Medium Density Alternative	Open Space Alternative
Land Use (Cont'd)			*Impact 3*. A significant and mitigable land use impact would result from construction of the southern crossing bridge at the southern end of Mare Island in Reuse Area 10. The proposed bridge could conflict with the planned residential and open space land uses at the southern end of Mare Island. The bridge could also affect sensitive biological resources located in the conservation easement. (p. 4-7) *Mitigation 3a*. Do not construct the southern crossing at this location. (p. 4-7) *Mitigation 3b*. Design the southern crossing to minimize impacts to residential and commercial development by careful siting and providing adequate noise attenuation and visual buffers. (p.4-7) *Impact 4*. A significant and mitigable impact would result from redevelopment interfering with or removing dredge slurry pipelines. Redevelopment in various reuse areas could interfere with or require the removal of dredge slurry pipelines. (p. 4-7) *Mitigation 4*. Design all development plans for Reuse Areas 3, 4, 5, 10, and 12 to allow continued transfer of dredged material to dredge disposal areas, unless use of the dredge disposal areas is terminated. (p.4-8) *Impact 5*. A significant and not mitigable land use impact would result from construction of the southern crossing bridge in Vallejo, resulting in demolition, relocation, and substantial alteration of existing land use patterns. (p. 4-9)		

TABLE 2-9
SUMMARY OF SIGNIFICANT ENVIRONMENTAL IMPACTS AND MITIGATIONS FROM DISPOSAL AND REUSE ALTERNATIVES *(continued)*

Resource Category	NAVY ACTIONS		REUSE ALTERNATIVES		
	Disposal	No Action Alternative	Reuse Plan Alternative	Medium Density Alternative	Open Space Alternative
Land Use (Cont'd)			*Mitigation 5.* Design the southern crossing to minimize displacement of existing residential and commercial uses. Provide adequate noise attenuation and visual buffers to reduce impacts to surrounding land uses. These measures would reduce impacts but not to a nonsignificant level. (p. 4-9)		
Socio-economics	No direct impacts.	No impacts.	*Impact 1.* A significant and mitigable impact would result from reuse of Roosevelt Terrace. The additional students generated by reuse of Roosevelt Terrace would exceed the capacity of Federal Terrace School. (p. 4-20) *Mitigation 1.* Possible mitigation measures to reduce overcrowding include construction of a new school, adding portable classrooms, and busing students to less crowded schools. (p. 4-20) *Impact 2.* A significant and mitigable impact would result from reuse of Mare Island. The additional students generated by reuse of Mare Island would exceed the capacity of Mare Island Elementary School. (p. 4-20) *Mitigation 2.* Possible mitigation measures to reduce overcrowding include construction of a new school, adding portable classrooms, and busing students to less crowded schools. (p. 4-21)	*Impact 1.* A significant and mitigable impact would result from the reuse of Roosevelt Terrace. The increased enrollment of elementary students generated by reuse of Roosevelt Terrace would exceed the capacity of Federal Terrace School. (p. 4-22) *Mitigation 1.* Same as described for the Reuse Plan Alternative. (p. 4-23) *Impact 2.* A significant and mitigable impact would result from reuse of Mare Island. The additional students generated by reuse of Mare Island would exceed the capacity of Mare Island Elementary School. (p. 4-23) *Mitigation 2.* Same as described for the Reuse Plan Alternative. (p. 4-23)	*Impact 1.* A significant and mitigable impact would result from reuse of Roosevelt Terrace. The increased enrollment of elementary students generated by reuse of Roosevelt Terrace would exceed the capacity of the Federal Terrace School. (p. 4-25) *Mitigation 1.* Same as described under Reuse Plan Alternative. (p. 4-25)

TABLE 2-9
SUMMARY OF SIGNIFICANT ENVIRONMENTAL IMPACTS AND MITIGATIONS FROM DISPOSAL AND REUSE ALTERNATIVES *(continued)*

Resource Category	NAVY ACTIONS		REUSE ALTERNATIVES		
	Disposal	No Action Alternative	Reuse Plan Alternative	Medium Density Alternative	Open Space Alternative
Public Services	No direct impacts.	No significant impacts.	*Impact 1.* A significant and mitigable impact would be the substantial increase in demand for Vallejo police services generated by the increased population on Mare Island. (p. 4-28) *Mitigation 1.* Adopt mechanisms to fund increased police staffing. The mechanisms could include the general plan policy for encouraging revenue-generating uses to help pay for the cost of new services. (p. 4-28) *Impact 2.* A significant and mitigable impact would be the substantial increase in the demand for Vallejo Fire Department (VFD) services at Mare Island. (p. 4-28) *Mitigation 2.* Adopt mechanisms to fund the projected staffing requirements. The mechanisms could include the general plan policy for encouraging revenue-generating uses to help pay for the new services. (p. 4-29) *Impact 3.* A significant and mitigable impact would be the substantial increase in the demand for emergency medical services at Mare Island. Emergency services are provided by the VFD and private ambulance companies. (p. 4-29)	*Impact 1.* A significant and mitigable impact would be the increased demand for Vallejo police services, although demand would be less because of the reduced population under this alternative. (p. 4-29) *Mitigation 1.* Same as for the Reuse Plan Alternative. (p. 4-29) *Impact 2.* A significant and mitigable impact would be the increased demand for Vallejo fire protection services, although demand would be less because of the reduced population under this alternative. (p. 4-30) *Mitigation 2.* Same as for the Reuse Plan Alternative. (p. 4-30) *Impact 3.* A significant and mitigable impact would be the increased demand for Vallejo emergency medical services at Mare Island, although demand would be less than under the Reuse Plan Alternative. (p. 4-30)	*Impact 1.* A significant and mitigable impact would be the increased demand for Vallejo police services at Mare Island, although demand would be less than under the other reuse alternatives. (p. 4-30) *Mitigation 1.* Same as for the Reuse Plan Alternative. (p. 4-30) *Impact 2.* A significant and mitigable impact would be the increased demand for Vallejo fire protection services at Mare Island, although demand would be less than that under the other reuse alternatives. (p. 4-30) *Mitigation 2.* Same as for the Reuse Plan Alternative. (p. 4-30) *Impact 3.* A significant and mitigable impact would be the increased demand for Vallejo emergency medical services at Mare Island, although demand would be less than that under the other reuse alternatives. (p. 4-31)

TABLE 2-9
SUMMARY OF SIGNIFICANT ENVIRONMENTAL IMPACTS AND MITIGATIONS FROM DISPOSAL AND REUSE ALTERNATIVES *(continued)*

Resource Category	NAVY ACTIONS		REUSE ALTERNATIVES		
	Disposal	No Action Alternative	Reuse Plan Alternative	Medium Density Alternative	Open Space Alternative
Public Services (Cont'd)			*Mitigation 3.* Update the emergency medical service agreements with ambulance companies; integrate the fire station on Mare Island with the VFD's emergency medical response system; adopt mechanisms to fund the projected staffing requirements. (p. 4-29)	*Mitigation 3.* Same as for the Reuse Plan Alternative. (p. 4-30)	*Mitigation 3.* Same as for the Reuse Plan Alternative. (p. 4-31)
Cultural Resources	No significant impacts.	No significant impacts.	No significant impacts	No significant impacts.	No significant impacts.
Aesthetics/ Scenic Resources	No direct impacts.	No significant impacts.	*Impact 1.* A significant and not mitigable impact would be created by construction of the southern crossing bridge across Mare Island Strait. The proposed southern crossing bridge would be prominently visible from viewpoints with high viewer sensitivity to the east, south, and southwest of Mare Island. (p. 4-45) *Mitigation 1.* Design the crossing and bridge to avoid disturbing the existing landscape to the greatest extent practical; design the bridge using materials to minimize its visual contrast with the surrounding landscape; and design lighting to keep glare to a minimum. (p. 4-45)	*Impact 1.* A significant and mitigable impact would result from constructing new trails in areas visible from viewpoints of high sensitivity, as described for the Reuse Plan Alternative. (p. 4-47) *Mitigation 1.* Same as for the Reuse Plan Alternative. (p. 4-47)	*Impact 1.* A significant and mitigable visual impact would result from constructing new trails visible from viewpoints of high viewer sensitivity, as described for the Reuse Plan Alternative. (p. 4-48) *Mitigation 1.* Same as for the Reuse Plan Alternative. (p. 4-48)

TABLE 2-9
SUMMARY OF SIGNIFICANT ENVIRONMENTAL IMPACTS AND MITIGATIONS FROM DISPOSAL AND REUSE ALTERNATIVES *(continued)*

Resource Category	NAVY ACTIONS		REUSE ALTERNATIVES		
	Disposal	No Action Alternative	Reuse Plan Alternative	Medium Density Alternative	Open Space Alternative
Aesthetics/ Scenic Resources (Cont'd)			*Impact 2*. A significant and mitigable visual impact would result from constructing new trails on the upland open space areas. Walking, cycling, and equestrian trails for the upland open space scenic resource area could result in visible scarring. The area is visible from many viewpoints with high viewer sensitivity. (p. 4-45) *Mitigation 2*. Use existing roads for trails to the extent possible. Do not locate trails on steep slopes that would require extensive cut and fill. Design the trails to blend with the existing natural features, thereby minimizing disturbance to the existing landscape. (p. 4-46) *Impact 3*. A significant and mitigable visual impact would result from locating the equestrian facility in the upland open space area, visible from viewpoints with high viewer sensitivity. Designing new structures without attention to visual quality could reduce the scenic quality of the affected area. (p. 4-46) *Mitigation 3a*. Do not relocate the facility to the upland open space area. (p. 4-46) *Mitigation 3b*. Do not locate the equestrian facilities on sideslopes, hilltops, or ridgelines. Use landscape buffers, construction materials, and colors that blend with the natural surroundings. (p. 4-46)	*Impact 2*. A significant and mitigable visual impact would result from relocating the equestrian facility to the regional park area, visible from viewpoints with high viewer sensitivity, as described for the Reuse Plan Alternative. (p. 4-47) *Mitigation 2*. Same as for the Reuse Plan Alternative. (p. 4-48)	*Impact 2*. A significant and mitigable impact would result from relocating the equestrian facility to the regional park area, visible from several areas of high viewer sensitivity, as described for the Reuse Plan Alternative. (p. 4-48) *Mitigation 2*. Same as for the Reuse Plan Alternative. (p. 4-49)

TABLE 2-9
SUMMARY OF SIGNIFICANT ENVIRONMENTAL IMPACTS AND MITIGATIONS FROM DISPOSAL AND REUSE ALTERNATIVES *(continued)*

Resource Category	NAVY ACTIONS		REUSE ALTERNATIVES		
	Disposal	No Action Alternative	Reuse Plan Alternative	Medium Density Alternative	Open Space Alternative
Aesthetics/ Scenic Resources (Cont'd)			*Impact 4.* A significant and mitigable visual impact could result from relocating the existing rifle range to the upland open space scenic resource area, visible from viewpoints with high viewer sensitivity. (p. 4-46) *Mitigation 4a.* Remove the rifle range from Mare Island. (p.4-46) *Mitigation 4b.* Do not locate the rifle range on sideslopes, hilltops, or ridgelines. Instead, locate the rifle range at the base of the hills, employing a design that creates minimum disturbance to the existing landscape. Select construction materials and colors to blend with the natural surroundings. (p. 4-46)		
Biological Resources	No significant impacts.	No significant impacts.	*Impact 1.* A significant and mitigable impact would result from locating the southern crossing bridge in Reuse Area 10. Constructing the bridge in this area could disturb sensitive species in the area to be established as a conservation easement. (p. 4-55) *Mitigation 1a.* Develop mitigation requirements for impacts to Mason's lilaeopsis in coordination with CDFG and USFWS. Mitigation could include avoidance of areas where the plants are found, relocation or transplantation of affected individuals, creation of a new population in a suitable environment, or enhancement and/or protection of a	*Impact 1.* A significant and mitigable impact could occur from construction adjacent to wetland areas as described under the Reuse Plan Alternative. (p.4-59) *Mitigation 1.* Same is for the Reuse Plan Alternative. (p. 4-59)	*Impact 1.* A significant and mitigable impact to adjacent wetlands could occur from construction adjacent to wetland areas as described under the Reuse Plan Alternative. (p. 4-61) *Mitigation 1.* Same as for the Reuse Plan Alternative. (p. 4-61)

TABLE 2-9
SUMMARY OF SIGNIFICANT ENVIRONMENTAL IMPACTS AND MITIGATIONS FROM DISPOSAL AND REUSE ALTERNATIVES *(continued)*

Resource Category	NAVY ACTIONS		REUSE ALTERNATIVES		
	Disposal	No Action Alternative	Reuse Plan Alternative	Medium Density Alternative	Open Space Alternative
Biological Resources (Cont'd)			threatened population off-site. A permit from the US Army Corps of Engineers (COE) under Section 404 of the Clean Water Act, 33 U.S.C. §1251 *et seq.*, would be required for any fill placed in the wetland. As a Federal agency the COE would be required to enter into consultation with the USFWS under Section 7 of the Endangered Species Act to ensure that no jeopardy to listed species (salt marsh harvest mouse and clapper rail) would result from the action. (p. 4-55) *Mitigation 1b.* Do not locate the southern crossing bridge in Reuse Area 10. (p. 4-55) *Impact 2.* A significant and mitigable impact could result from construction adjacent to wetland areas. Reuse activities proposed for areas adjacent to wetlands could involve construction that could affect portions of wetland communities. (p. 4-57) *Mitigation 2.* Wetland areas would require a permit from COE under Section 404 of the Clean Water Act for any fill placed in the wetland. The COE permit may include mitigation measures, such as wetland restoration or creation for wetland values and functions lost. Avoid impacts to wetlands on Mare Island by implementing practices that do not allow construction or staging to occur in wetland areas, and prohibit access to wetlands when entering or exiting proposed development areas. Restrict all vehicle and pedestrian traffic to existing trails and roads. (p. 4-58)		

TABLE 2-9
SUMMARY OF SIGNIFICANT ENVIRONMENTAL IMPACTS AND MITIGATIONS FROM DISPOSAL AND REUSE ALTERNATIVES *(continued)*

Resource Category	NAVY ACTIONS		REUSE ALTERNATIVES		
	Disposal	No Action Alternative	Reuse Plan Alternative	Medium Density Alternative	Open Space Alternative
Water Resources	No direct impacts.	No significant impacts.	*Impact 1.* A significant and mitigable impact to water resources would result from increased erosion/sedimentation into Mare Island Strait. NPDES construction stormwater permit requirements would require preparation of an SWPPP. (p. 4-65) *Mitigation 1.* Develop erosion control plans consistent with the SWPPP prior to any site clearing or grading. Where necessary, install erosion control structures prior to the start of the rainy season to remain through the end of that season, and include a best management practices (BMP) program for stormwater collection as part of the reuse project. Use management measures and practices in the BMP program identified by the EPA in the Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters and the California Stormwater Best Management Practice Handbook. (p. 4-66) *Impact 2.* A significant and mitigable impact would result from exposure of Mare Island occupants to flood hazards through location of development in flood zones. Ongoing maintenance of the existing levees would occur under the reuse plan. (p. 4-66)	*Impact 1.* A significant and mitigable impact to water resources would result from increased erosion/sedimentation into Mare Island Strait as described for the Reuse Plan Alternative but somewhat reduced. (p. 4-69) *Mitigation 1.* Same as for the Reuse Plan Alternative. (p. 4-69) *Impact 2.* A significant and mitigable impact would result from exposure of Mare Island occupants to flood hazards through development in flood zones as described for the Reuse Plan Alternative, although the population of these areas would be reduced. (p. 4-69)	*Impact 1.* A significant and mitigable impact to water resources would result from increased erosion/sedimentation into Mare Island Strait, as described for the other reuse alternative but at a lesser level. (p. 4-71) *Mitigation 1.* Same as for the Reuse Plan Alternative. (p. 4-71) *Impact 2.* A significant and mitigable impact would result the exposure of Mare Island occupants to flood hazards through development in flood zones. This alternative would reduce flood hazards to Reuse Areas 3, 5, and 10 compared with both the Reuse Plan Alternative and the Medium Density Alternative (p. 4-71)

TABLE 2-9
SUMMARY OF SIGNIFICANT ENVIRONMENTAL IMPACTS AND MITIGATIONS FROM DISPOSAL AND REUSE ALTERNATIVES *(continued)*

Resource Category	NAVY ACTIONS		REUSE ALTERNATIVES		
	Disposal	No Action Alternative	Reuse Plan Alternative	Medium Density Alternative	Open Space Alternative
Water Resources (Cont'd)			*Mitigation 2a.* Protect any new development at sites below 10 feet MSL from flooding by raising the base level of the site to a minimum of 10 feet MSL. In addition, any new development shall comply fully with the city's Flood Protection Ordinance. All 100-year flood plains on the site shall be mapped by FEMA as part of the FIRM process. Rights of way for levees protecting inland areas from tidal flooding shall be sufficiently wide on the upland side to allow for future levee widening to support additional height so that no fill for levee widening is placed in the bay. (p. 4-67) *Mitigation 2b.* Locate new development in previously undeveloped areas outside of the 100-year flood zone unless measures are taken to raise these areas above the 100-year flood zone. (p. 4-67)	*Mitigation 2.* Same as for the Reuse Plan Alternative. (p. 4-69)	*Mitigation 2.* Same as for the Reuse Plan Alternative. (p. 4-71)
			Impact 3. A significant and mitigable impact would result from the exposure of contaminated sediments through berthfront dredging of Mare Island Strait. If contaminated sediment were exposed by future dredging, contaminant dispersion and exposure of organisms in the food chain could occur. (p. 4-67)	*Impact 3.* A significant and mitigable impact would result from the exposure of contaminated sediments through further berthfront dredging as described under the Reuse Plan Alternative. (p. 4-70)	*Impact 3.* A significant and mitigable impact would result from the exposure of contaminated sediments through further berthfront dredging as described for the Reuse Plan Alternative. (p. 4-71)
			Mitigation 3. Use special precautions and measures prior to undertaking dredging. Typically, dredging contaminated sediments will require the use of special dredging equipment, such as an environmental or closed bucket. Closed clamshell buckets minimize the amount of sediment or water contaminated from the sediment from escaping. (p. 4-67)	*Mitigation 3.* Same as for the Reuse Plan Alternative. (p. 4-70)	*Mitigation 3.* Same as for the Reuse Plan Alternative. (p. 4-72)

TABLE 2-9
SUMMARY OF SIGNIFICANT ENVIRONMENTAL IMPACTS AND MITIGATIONS FROM DISPOSAL AND REUSE ALTERNATIVES *(continued)*

Resource Category	NAVY ACTIONS		REUSE ALTERNATIVES		
	Disposal	No Action Alternative	Reuse Plan Alternative	Medium Density Alternative	Open Space Alternative
Geology and Soils	No direct impacts.	No significant impacts.	*Impact 1.* A significant and mitigable impact would be the downslope flooding caused by dam failures. Failure of the dams of the golf course reservoir and the saltwater reservoir in Reuse Area 12, due to structural weakness or erosion due to seepage, could flood downslope areas. (p. 4-76)	*Impact 1.* A significant and mitigable impact would result from downslope flooding caused by dam failures, as described for the Reuse Plan Alternative. (p. 4-78)	*Impact 1.* A significant and mitigable impact would result from downslope flooding resulting from dam failures, as described for the Reuse Plan Alternative. (p. 4-79)
			Mitigation 1. Implement periodic inspections of the dams for structural soundness by a qualified geotechnical engineer. Mitigation could take the form of lining or reinforcing dams, as necessary. (p. 4-76)	*Mitigation 1.* Same as for the Reuse Plan Alternative. (p. 4-78)	*Mitigation 1.* Same as for the Reuse Plan Alternative. (p. 4-79)
			Impact 2. A significant and mitigable impact would result from the structural damage due to ground shaking from a large earthquake. Structural damage resulting from a large earthquake could cause economic loss, infrastructure disruption, and loss of life. (p. 4-76)	*Impact 2.* A significant and mitigable impact would result from structural damage due to ground shaking from a large earthquake, as described for the Reuse Plan Alternative. (p. 4-78)	*Impact 2.* A significant and mitigable impact would result from structural damage due to ground shaking from a large earthquake, as described for the Reuse Plan Alternative. (p. 4-79)
			Mitigation 2. Conduct earthquake vulnerability studies for buildings proposed for reuse. Design construction to meet existing seismic requirements. Evaluate infrastructure links to the mainland for vulnerability to earthquakes and develop a seismic contingency plan for restoring essential services to the island. (p. 4-76)	*Mitigation 2.* Same as for the Reuse Plan Alternative. (p. 4-78)	*Mitigation 2.* Same as for the Reuse Plan Alternative. (p. 4-79)

TABLE 2-9
SUMMARY OF SIGNIFICANT ENVIRONMENTAL IMPACTS AND MITIGATIONS FROM DISPOSAL AND REUSE ALTERNATIVES *(continued)*

Resource Category	NAVY ACTIONS		REUSE ALTERNATIVES		
	Disposal	No Action Alternative	Reuse Plan Alternative	Medium Density Alternative	Open Space Alternative
Geology and Soils (Cont'd)			*Impact 3.* A significant and mitigable impact would result from the exposure of a large number of people to areas with a high potential for liquefaction. Liquefaction would cause increased damage to structures in these areas through the failure of the ground supporting the structure. (p. 4-77) *Mitigation 3.* Evaluate the foundations and design of existing structures to determine whether or not retrofitting these structures would be economically feasible. Design new structures to meet current building codes. Replace buildings that cannot be made adequately safe. (p. 4-77) *Impact 4.* A significant and mitigable impact would result from slope failure in or adjacent to areas of reuse. A slope failure in Reuse Area 9 could significantly impact structures in this area. (p. 4-78) *Mitigation 4.* Perform a thorough geologic evaluation of any new construction site in Reuse Areas 9 and 10 to determine the suitability for construction and any mitigation needed against potential slope failure at the building site or upslope from it. (p. 4-78)	*Impact 3.* A significant and mitigable impact would result from the exposure of large numbers of people to areas with a high liquefaction potential, as described for the Reuse Plan Alternative. (p. 4-79) *Mitigation 3.* Same as for the Reuse Plan Alternative. (p. 4-79) *Impact 4.* A significant and mitigable impact would result from slope failure in or adjacent to areas of reuse, as described under the Reuse Plan Alternative. (p. 4-79) *Mitigation 4.* Same as for the Reuse Plan Alternative. (p. 4-79)	*Impact 3.* A significant and mitigable impact would result from the exposure of large numbers of people to areas with high potential for liquefaction, as described for the Reuse Plan Alternative. (p. 4-80) *Mitigation 3.* Same as for the Reuse Plan Alternative. (p. 4-80) *Impact 4.* A significant and mitigable impact would result from slope failure in or adjacent to reuse, as described under the Reuse Plan Alternative. (p. 4-80) *Mitigation 4.* Same as for the Reuse Plan Alternative. (p. 4-80)
Traffic and Circulation	No direct impacts.	No significant impacts.	*Impact 1.* A significant and mitigable impact to local roadways would result from the increase in truck traffic that would impact peak commute traffic on Mare Island access roadways and the Vallejo arterial roadway network off-island. (p. 4-92)	*Impact 1.* A significant and mitigable impact would be the increased peak commute traffic on Mare Island access roadways, as described for the Reuse Plan Alternative. (p. 4-98)	*Impact 1.* A significant and mitigable impact would be the increased peak commute traffic on Mare Island access roadways, as described for the Reuse Plan Alternative. (p. 4-103)

TABLE 2-9
SUMMARY OF SIGNIFICANT ENVIRONMENTAL IMPACTS AND MITIGATIONS FROM DISPOSAL AND REUSE ALTERNATIVES *(continued)*

Resource Category	NAVY ACTIONS		REUSE ALTERNATIVES		
	Disposal	No Action Alternative	Reuse Plan Alternative	Medium Density Alternative	Open Space Alternative
Traffic and Circulation (Cont'd)			*Mitigation 1.* Monitor truck activity. Limit or restrict truck activity during commute periods. (p. 4-92) *Impact 2.* A significant and mitigable impact would be safety hazards created by increased truck traffic on Mare Island internal roadways. The street widths and turning radii are not sufficient for truck use. (p. 4-92) *Mitigation 2.* Modify on-island intersections to Vallejo industrial street standards. Construct all new roadways or widen all existing roadways generating truck traffic to Vallejo street standards to allow safe turn movements at driveways. Construct all new driveways or reconstruct all existing driveways (as needed) to be used for truck access to Vallejo street standards. Widen or construct all roadways between the Mare Island access locations and the industrial/warehousing facilities that are regularly used by trucks to conform to Vallejo street standards. (p. 4-93) *Impact 3.* A significant and mitigable impact would be safety hazards resulting from truck loading and unloading movements on Mare Island. (p. 4-93) *Mitigation 3.* Reposition loading bays, as needed, to prevent trucks from disrupting the flow of traffic on Mare Island streets. (p. 4-93)	*Mitigation 1.* Same as for the Reuse Plan Alternative. (p. 4-98) *Impact 2.* A significant and mitigable impact would be the safety hazards created by increased truck traffic on Mare Island internal roadways, as under the Reuse Plan Alternative. (p. 4-98) *Mitigation 2.* Same as for the Reuse Plan Alternative. (p. 4-98) *Impact 3.* A significant and mitigable impact would be safety hazards resulting from truck loading and unloading movements on Mare Island, as under the Reuse Plan Alternative. (p. 4-98) *Mitigation 3.* Same as for the Reuse Plan Alternative. (p. 4-98)	*Mitigation 1.* Same as for the Reuse Plan Alternative. (p. 4-103) *Impact 2.* A significant and mitigable impact would be the safety hazards created by increased truck traffic on Mare Island internal roadways, as under the Reuse Plan Alternative. (p. 4-103) *Mitigation 2.* Same as for the Reuse Plan Alternative. (p. 4-103) *Impact 3.* A significant and mitigable impact would be safety hazards resulting from truck loading and unloading movements on Mare Island, as under the Reuse Plan Alternative. (p. 4-103) *Mitigation 3.* Same as for the Reuse Plan Alternative. (p. 4-103)

TABLE 2-9
SUMMARY OF SIGNIFICANT ENVIRONMENTAL IMPACTS AND MITIGATIONS FROM DISPOSAL AND REUSE ALTERNATIVES *(continued)*

Resource Category	NAVY ACTIONS		REUSE ALTERNATIVES		
	Disposal	No Action Alternative	Reuse Plan Alternative	Medium Density Alternative	Open Space Alternative
Traffic and Circulation (Cont'd)			*Impact 4.* A significant and mitigable impact would be safety and operational hazards resulting from new rail use on the island or to and from the island via Mare Island Causeway. (p. 4-93) *Mitigation 4.* Protect all Mare Island railroad-related at-grade railroad crossings on and off the island with the appropriate combination of gates and flashing lights. Close the Mare Island Causeway bridge to auto or truck traffic when being used by a train. Restrict trains during peak traffic periods. (p. 4-93) *Impact 5.* A temporary significant and mitigable impact would result from the increased peak period construction traffic volumes on Vallejo and Mare Island street systems. The amount of construction-related traffic would correspond to the extent of reuse land development underway at any one time. (p. 4-94) *Mitigation 5.* Monitor construction, demolition, and remediation traffic volumes and restrict activity to off-peak traffic periods, as appropriate. (p. 4-94)	*Impact 4.* A significant and mitigable impact would be safety and operational hazards resulting from new rail use on the island or to and from the island via Mare Island Causeway, as under the Reuse Plan Alternative. (p. 4-99) *Mitigation 4.* Same as for the Reuse Plan Alternative. (p. 4-99) *Impact 5.* A temporary significant and mitigable impact would result from the increased peak period construction traffic volumes on Vallejo and Mare Island street systems, as under the Reuse Plan Alternative. (p. 4-99) *Mitigation 5.* Same as for the Reuse Plan Alternative. (p. 4-99)	*Impact 4.* A significant and mitigable impact would be safety and operational hazards resulting from new rail use on the island or to and from the island via Mare Island Causeway, as under the Reuse Plan Alternative. (p. 4-103) *Mitigation 4.* Same as for the Reuse Plan Alternative. (p. 4-103) *Impact 5.* A temporary significant and mitigable impact would result from the increased peak period construction traffic volumes on Vallejo and Mare Island street systems, as under the Reuse Plan Alternative. (p. 4-104) *Mitigation 5.* Same as for the Reuse Plan Alternative. (p. 4-104)
Air Quality	No direct impacts.	No significant impacts.	*Impact 1:* A temporary significant and mitigable impact would result from the dust generated by building demolition, renovation, and construction activities. (p. 4-110)	*Impact 1:* Temporary significant and mitigable construction-related air quality impacts would occur under the Medium Density Alternative, similar to those discussed for the Reuse Plan Alternative. No significant construction activity would occur in Reuse Area 10. (p. 4-114)	*Impact 1:* Temporary significant and mitigable construction-related air quality impacts under the Open Space Alternative would be similar to those discussed for the Reuse Plan Alternative. No significant construction activity would occur in Reuse Area 10. (p. 4-116)

TABLE 2-9
SUMMARY OF SIGNIFICANT ENVIRONMENTAL IMPACTS AND MITIGATIONS FROM DISPOSAL AND REUSE ALTERNATIVES *(continued)*

Resource Category	NAVY ACTIONS		REUSE ALTERNATIVES		
	Disposal	No Action Alternative	Reuse Plan Alternative	Medium Density Alternative	Open Space Alternative
Air Quality (Cont'd)			*Mitigation 1:* Use mowing rather than discing for weed control; seed and water inactive portions of construction sites; minimize the area disturbed by clearing, earthmoving, or excavation activities; use water or dust control solutions on all unpaved areas subject to vehicle traffic, grading, or excavation; ensure that any petroleum-based dust control products meet BAAQMD regulations for cutback asphalt paving materials; halt all site clearing, grading, earthmoving, and excavation activities during periods of sustained strong winds; sweep streets adjacent to the construction site to remove accumulated dust and soil; and properly maintain all construction vehicles and avoid excessive idling of inactive equipment. (p. 4-110) *Impact 2:* A temporary significant and mitigable impact would result from the dust generated during construction of the southern crossing bridge and associated connecting roadways. (p. 4-111) *Mitigation 2:* Implement the dust control measures described under Mitigation 1. (p. 4-111)	*Mitigation 1:* Same as for the Reuse Plan Alternative. (p. 4-114)	*Mitigation 1:* Same as for the Reuse Plan Alternative. (p. 4-116)
Noise	No direct impacts.	No significant impacts.	*Impact 1:* A temporary significant and mitigable noise impact would be generated by demolition and construction activities, which could cause temporary disturbance to adjacent land uses. (p. 4-121)	*Impact 1*: A temporary significant and mitigable noise impact would result from demolition and construction activities, as described for the Reuse Plan Alternative. No construction would occur in Reuse Area 10. (p. 4-126)	*Impact 1*: A temporary significant and mitigable noise impact would result from demolition and construction activities, as described for the Reuse Plan Alternative, although at a reduced level. No construction would occur in Reuse Area 10. (p. 4-127)

TABLE 2-9
SUMMARY OF SIGNIFICANT ENVIRONMENTAL IMPACTS AND MITIGATIONS FROM DISPOSAL AND REUSE ALTERNATIVES *(continued)*

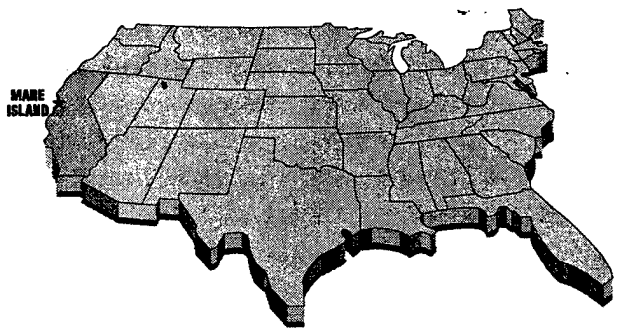
Resource Category	NAVY ACTIONS		REUSE ALTERNATIVES		
	Disposal	No Action Alternative	Reuse Plan Alternative	Medium Density Alternative	Open Space Alternative
Noise (Cont'd)			*Mitigation 1:* Limit construction activities to normal daytime work hours (7 AM to 6 PM), Monday through Saturday, with no construction on Sundays or Federal holidays. (p. 4-121) *Impact 2:* A significant and mitigable noise impact could be generated during construction of the proposed southern crossing bridge. Resulting noise levels could exceed noise element and land use compatibility guidelines depending upon the locations of the bridge and types of property uses being affected by the increase in noise. (p.4-121) *Mitigation 2(a):* Minimize construction noise impacts by properly selecting site location and by coordinating facility construction with adjacent development in Reuse Area 10 on Mare Island and adjacent areas in Vallejo. (p. 4-123) *Mitigation 2(b):* Identify locations in facility design and route selection studies that place bridge abutments and access roadways in commercial or industrial areas on Mare Island or in Vallejo. (p. 4-123) *Mitigation 2(c):* Coordinate the phasing of residential development in Reuse Area 10 with design and construction of the southern crossing so as to minimize noise impacts near the construction site. (p. 4-123) *Mitigation 2(d):* Limit heavy construction equipment and pile driver use to normal daytime work hours. (p. 4-123)	*Mitigation 1*: Same as for the Reuse Plan Alternative. (p. 4-126) *Impact 2*: A significant and mitigable noise impact would result from retention of the rifle range in its present location. The noise generated from use of the range would not be compatible with surrounding residential land uses. (p. 4-126) *Mitigation 2*: Remove the rifle range from Mare Island. (p. 4-126)	*Mitigation 1*: Same as for the Reuse Plan Alternative. (p. 4-127) *Impact 2*: A significant and mitigable noise impact could be generated by industrial operations. These levels could be incompatible with adjacent noise sensitive land uses. (p. 4-127) *Mitigation 2*: Same as for the Reuse Plan Alternative. (p. 4-128)

TABLE 2-9
SUMMARY OF SIGNIFICANT ENVIRONMENTAL IMPACTS AND MITIGATIONS FROM DISPOSAL AND REUSE ALTERNATIVES *(continued)*

Resource Category	NAVY ACTIONS		REUSE ALTERNATIVES		
	Disposal	No Action Alternative	Reuse Plan Alternative	Medium Density Alternative	Open Space Alternative
Noise (Cont'd)			*Impact 3:* A significant and mitigable noise impact would result from relocating the rifle range to the proposed regional park. The noise generated by use of the range would conflict with passive recreational uses. (p. 4-123) *Mitigation 3:* Remove the rifle range from Mare Island. (p. 4-123) *Impact 4:* A significant and mitigable noise impact could result from industrial operations at Mare Island. These uses could generate noise levels incompatible with adjacent noise sensitive land uses. (p. 4-123) *Mitigation 4:* Perform noise evaluations of heavy industrial operations prior to approval to ensure that site location and site design features will avoid potential noise problems. (p. 4-123) *Impact 5:* Significant and mitigable traffic noise impacts would occur at Railroad and 8th and along Cedar Avenue (see Table 4-26). The increase in noise levels south of 8th Street would be due in part to traffic patterns associated with the proposed southern crossing bridge. (p. 4-124) *Mitigation 5*: Use roadway designs and traffic controls to discourage high traffic volumes along Cedar Avenue in the Farragut Village neighborhood. (p. 4-124)	*Impact 3*: A significant and mitigable impact would result from industrial operations as described for the Reuse Plan Alternative. (p. 4-126) *Mitigation 3*: Same as for the Reuse Plan Alternative. (p. 4-126) *Impact 4*. A significant and mitigable noise impact would occur at Cedar and 9th Street in the vicinity of Farragut Village as indicated by Table 4-26. The projected increase in noise levels would exceed the land use compatibility criteria for residential use (58 dB). (p. 4-126) *Mitigation 4*: Same as for the Reuse Plan Alternative. (p. 4-126)	*Impact 3*: A significant and mitigable traffic noise impact would occur at Cedar Avenue near 9th. This area is in the vicinity of Farragut Village and noise levels would exceed the land use compatibility criteria of 58 CNEL (see Table 4-26). (p. 4-128) *Mitigation 3*: Same as for the Reuse Plan Alternative. (p. 4-128)

TABLE 2-9
SUMMARY OF SIGNIFICANT ENVIRONMENTAL IMPACTS AND MITIGATIONS FROM DISPOSAL AND REUSE ALTERNATIVES *(continued)*

Resource Category	NAVY ACTIONS		REUSE ALTERNATIVES		
	Disposal	No Action Alternative	Reuse Plan Alternative	Medium Density Alternative	Open Space Alternative
Utilities	No direct impacts.	No impacts.	*Impact 1*. A significant and mitigable impact would result from sanitary waste generation levels equaling or slightly exceeding system capacity. For the proposed 750 condominiums in Reuse Area 10, the existing collection system may be inadequate. (p. 4-132) *Mitigation 1.* Assess the existing portions of the collection system and improve as necessary where significant increases in population would result from proposed development. (p. 4-132)	No significant impacts.	No significant impacts.
Hazardous Materials and Waste	No direct impacts.	No significant impacts.	No significant impacts.	No significant impacts.	No significant impacts.



3.0 AFFECTED ENVIRONMENT

3.1	LAND USE	3-1
3.2	SOCIOECONOMICS	3-18
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3. AFFECTED ENVIRONMENT

This chapter describes existing environmental and socioeconomic conditions at Mare Island Naval Shipyard and the area surrounding the shipyard. The shipyard included all of Mare Island as well as Roosevelt Terrace, the main entrance, and the railroad spur, located off the island. Preclosure and current conditions are described for resources at the shipyard. The information contained in this chapter serves as background to identify and evaluate environmental impacts resulting from the disposal of Federal surplus land at the shipyard and implementation of the community reuse plan.

The setting discussion for each resource identifies the Region of Influence (ROI) applicable to the specific resource area. An ROI is a geographic area in which impacts for a particular resource would likely occur. The ROI for a resource having regional impacts will be different from the ROI for a resource with localized impacts. Existing conditions are described for land use, socioeconomics, public services, cultural resources, aesthetics, biology, water resources, geology and soils, traffic and circulation, air quality, noise, utilities, and hazardous materials.

3.1 LAND USE

This section describes historic land use at the former shipyard and surrounding areas. The ROI applicable to the land use discussion includes all of Mare Island, the off-island former shipyard properties, the portion of Vallejo within a half mile of Mare Island Strait, and the portion of Solano County within a half mile of the shipyard.

When the shipyard was operational, manufacturing, retail, educational, residential, and recreational activities took place on the island. General development characteristics under operational conditions (1988-89) are indicated in Table 3-1. Highway 37 to the north gate and the causeway bridge to the main entrance are the only 2 roads onto the island. On the island itself, a grid road system served the developed east side, but there are few roads in the far south and on the western side of the island. A freight rail line was part of the causeway bridge, and rail lines serviced the eastern side of the shipyard. The tracks are extensive, with spurs running to various industrial buildings, piers, and dry docks.

TABLE 3-1
MARE ISLAND NAVAL SHIPYARD
LAND USE CHARACTERISTICS (1989)

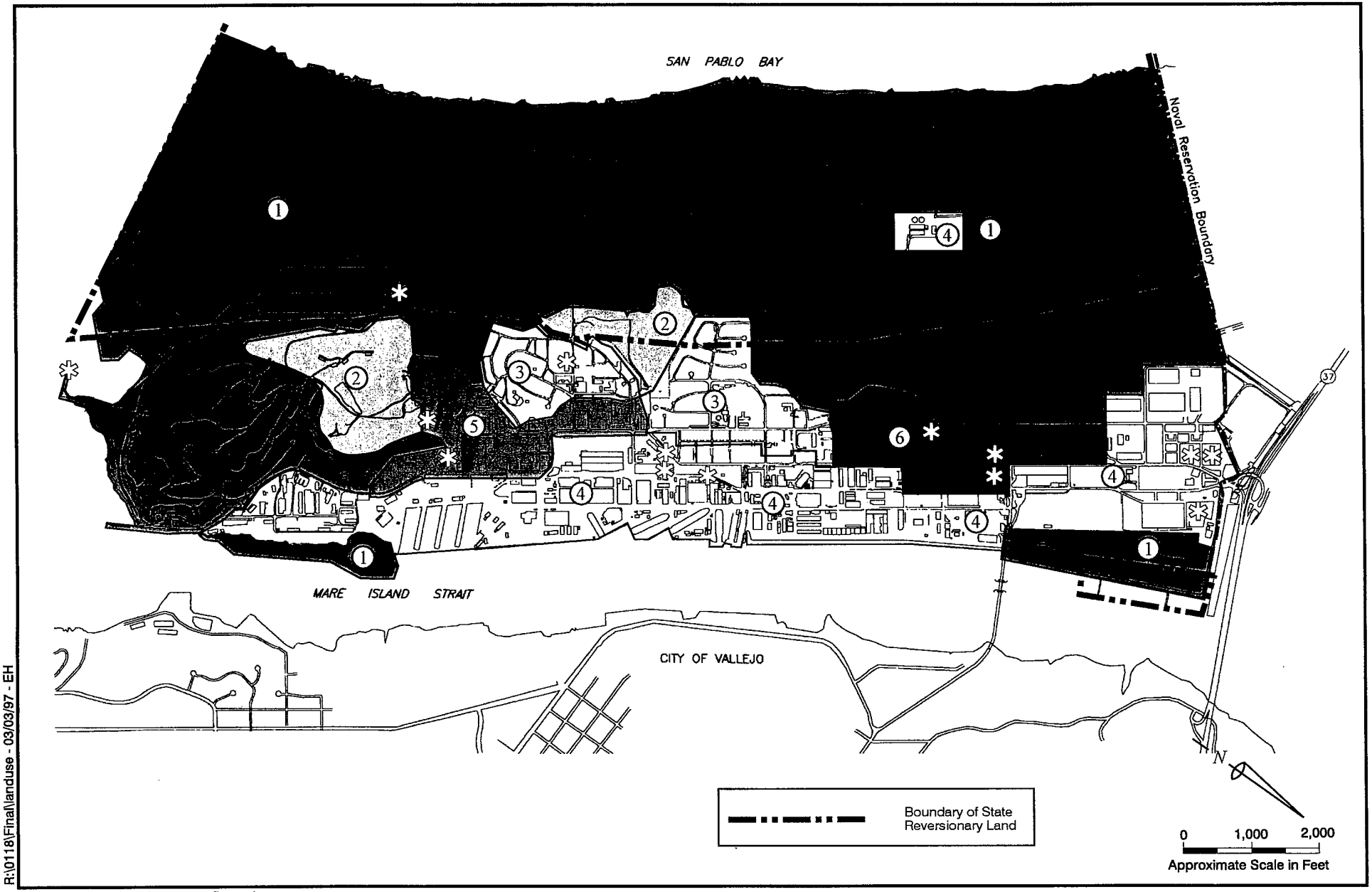
Development Characteristics	
Industrial	4.4 million square feet
Warehouse	1.7 million square
Office	950,000 square feet
Retail	530,000 square feet
Community	170,000 square feet
Education	700,000 square feet
Shipyard	4 dry docks, 20 ship berths, 2 shipbuilding ways, 3 finger piers (industrial area has 1.5 miles of waterfront)
Residential	1,083 units, including 483 on-site units, 600 off-site units, (Roosevelt Terrace), and about 2,000 beds/dormitory units
Other Uses	School, 2 daycare centers, medical clinic, 3 fire stations, golf course, 2 athletic fields, 3 swimming pools, 9 tennis courts, stables

Source: US Navy 1989

Structures that formerly housed shipyard operations are located on the eastern part of the island, while open space areas make up the western part of the island, on state reversionary land. Industrial buildings are concentrated along almost all of the eastern waterfront. The commercial retail structures are concentrated in a northern section of the island west of the waterfront. Two residential developments are south of the retail structures, separated by a recreational area/rifle range. Between the south residential development and the waterfront industrial is an educational complex, bordered on the southwest by a 9-hole golf course and open space. Figure 3-1 illustrates the current land use pattern on Mare Island. Photographs of current buildings and open space features of the island are provided in Appendix A.

3.1.1 Mare Island Land Uses

The following narrative describes the historic land uses on Mare Island, focusing on buildings, open space, and specialized facilities. The description is organized by general categories of uses consistent with the predominant building type or land use in an area.



The existing land uses reflect the uses of the shipyard prior to closure.

LEGEND:

- 1 Open Space
- 2 Recreational
- 3 Residential
- 4 Warehouse/Industrial
- 5 Educational/Institutional
- 6 Community Commercial
- Recreational Facility

Developed by: Tetra Tech, 1995

Existing Land Uses

Mare Island, California

Figure 3-1

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The ROI includes properties at Mare Island being transferred to other Federal agencies and land that will revert to the State of California. Federal agency transfer lands are located in Reuse Areas 5, 9, 10, 12, and in the dredge disposal area immediately west of Reuse Area 1. The entire western side of the island is comprised of wetlands and dredge disposal areas that will revert to the state.

Industrial/Warehouse

Industrial and warehouse buildings are located along the eastern half of the shipyard, next to Mare Island Strait, and are identified as Reuse Areas 1, 3, 5, and 10 in the reuse plan (see Figure 2-2) on surplus land. Warehouse and light industrial buildings are primarily in the northern portions of the shipyard, with heavy industrial buildings in the central and southern portion. The industrial/warehouse areas also contain some buildings that housed supporting services, such as retail, office, residential, historic, and recreation.

The northern part of the shipyard east of the dredge ponds/open space area is composed predominantly of warehouse buildings with some light industrial buildings and recreation uses (Reuse Area 1). This area is accessed from Highway 37 via the north entrance. Several large warehouses in this area border the wetlands, and a smaller structure is on the east side of Walnut Avenue south of I Street. Recreation areas in this part of the shipyard include playing fields, tennis courts, and undeveloped open space. Extending south along the waterfront (Reuse Area 3) are several industrial and office buildings bordered by large paved areas striped for parking. The former medical dispensary is also in this area.

Heavy industrial facilities for shipbuilding and overhauling are located in the former Controlled Industrial Area (CIA), which includes large structures, specialized shops, overhead cranes, and rail freight lines (Reuse Area 5). The 250,000 square foot machine shop is the largest industrial structure in this area. Several of the shipyard's historic structures are found in this area (see Section 3.4 of this document for a detailed description of the historic resources). Infrastructure in this area of the shipyard supports its historic shipbuilding function (see Section 3.12 of this document for a detailed description of these utilities). Finger piers constructed during World War II for berthing fleet ships are between 17th and 18th Streets. The area south of the CIA (Reuse Area 10) contains several industrial buildings.

Residential

Single-family, duplex, and dormitory housing structures are located throughout Mare Island and at Roosevelt Terrace in Vallejo (see Section 3.1.3). Residential units on Mare Island are in Reuse Areas 1, 4, 6, and 8. Single-family residences are primarily in Reuse Area 4, while the family duplex units

are in the Farragut Village and Coral Sea Village planning areas (Reuse Areas 6 and 8). Dormitory buildings are in Reuse Areas 1, 6, and 8.

Recreation

The shipyard contains several active and passive recreational facilities, including a rifle range (Reuse Area 7), a 9-hole golf course (Reuse Area 11), saddle club, several indoor and outdoor recreational complexes, and fishing piers (see Table 3-2). The rifle range is on both surplus land and state reversionary land, while the saddle club is solely on state reversionary land. The remaining facilities are on surplus land. The shipyard also has 12.4 acres of cultivated parks. Alden Park, located in the historic area, contains a collection of trees from around the Pacific Basin. There are also several picnic areas with tables and barbecues.

TABLE 3-2
MARE ISLAND RECREATIONAL FACILITIES

Facility	Location	Activities/Services
Golf Course	North end of South Hill	9-hole golf course, snack bar, pro shop
Rifle Range	South of Farragut Village	600-yard, long-distance rifle range, 14 shorter ranges, small unheated classroom building, storage sheds, 2 observation towers
Playing Fields	Various	Morton Field and the North Gate Fields
Tennis Courts	Walnut Ave. across from St. Peter's Chapel; next to Morton Field	9 tennis courts
Fishing Access	North Pier; south shore	Fishing access
Stables	West of golf course	Stable area with 4 barns and a 20-mount capacity
Outdoor Swimming Pools	"O" Club, Building 396	Swimming pool (open in summer only)
Owen Center	Building H-86	Basketball courts, indoor pool, showers, lockers
Rodman Center	Building 545	Basketball courts, indoor pool, showers, lockers, racquetball, weight room, bowling center, movie theater

Source: US Navy 1994a

Educational/Institutional

Educational/Institutional uses are on surplus and Federal agency transfer land that approximates Reuse Area 9 in the reuse plan. The area contains several buildings organized in a campus-like setting, including landscaped open space areas and paved areas striped for parking. Some commercial and light industrial buildings also are in this area.

Open Space

The southern and western regions of the shipyard include open space areas. The southern region is surplus land, while the western region of the shipyard is state reversionary land. Roads into these areas are limited, and existing roads are not well-maintained. The southern end of the shipyard contains a 200-acre upland open space area defined by the original hill that rises several hundred feet above sea level (Reuse Area 12), this area also contains a historic cemetery. The western side of the shipyard is composed of tidal/nontidal wetlands, active and inactive dredge disposal areas, and submerged lands. The capacity of the ponds is estimated to be 3 million cubic yards. The cumulative discussions of biologic and hydrologic resources in Chapter 5 of this document further describe the dredge disposal areas.

Historic

The Mare Island Naval Shipyard was designated a National Historic Landmark in 1975. Historic buildings of varying architectural style and material are located throughout Mare Island, primarily on surplus land, with the highest concentration in the Historic Area (Reuse Area 4). Alden Park, St. Peter's Chapel, and the Classic Revival houses on "Captain's Row" contribute to the National Historic Landmark designation and are in the Historic Area. Subsequent studies identified the Mare Island Historic District comprised of approximately 980 acres and including 661 buildings and structures, 502 of which are contributing elements. It also includes 12 historic landscape areas and 1 historical archeological site, all of which contribute to the historic significance of the district. The Mare Island Historic District was listed on the National Register of Historic Places in January 1997. Historic resources are described further in Section 3.4 (Cultural Resources) of this document.

3.1.2 Off-island Land Uses

Certain shipyard facilities are not located on Mare Island—Roosevelt Terrace, the causeway and main entrance, and the railroad spur. Roosevelt Terrace is a residential complex in Vallejo, off Highway 37 and west of Sacramento Street. The main entrance is on the mainland side of the causeway. The railroad spur

extends from the shipyard causeway rail bridge through Vallejo to Broadway. These facilities are all on surplus land.

Roosevelt Terrace

Roosevelt Terrace is a World War II-era high-density residential complex composed of 50 2-story rectangular cinder block buildings laid out in east/west facing rows throughout the site (Figure 3-2). The upper stories of the buildings are painted off-white and the ground levels are painted various pastel shades.

Between the buildings are parking lots, clotheslines, and yards with playground equipment. Bushes border the complex, and there are mature pine trees between the rows of buildings. Mature trees line the streets around and through Roosevelt Terrace. Sidewalks line both sides of each street, in front of, behind, and between the buildings.

Main Entrance

The main entrance is at the intersection of Mare Island Causeway, Tennessee Street, and Wilson Avenue (Figure 3-3). This area includes Building 513, a 2-story wood-frame structure surrounded by a paved area, striped for parking. A guard shack and a small brick building (Building 479) are also in this area.

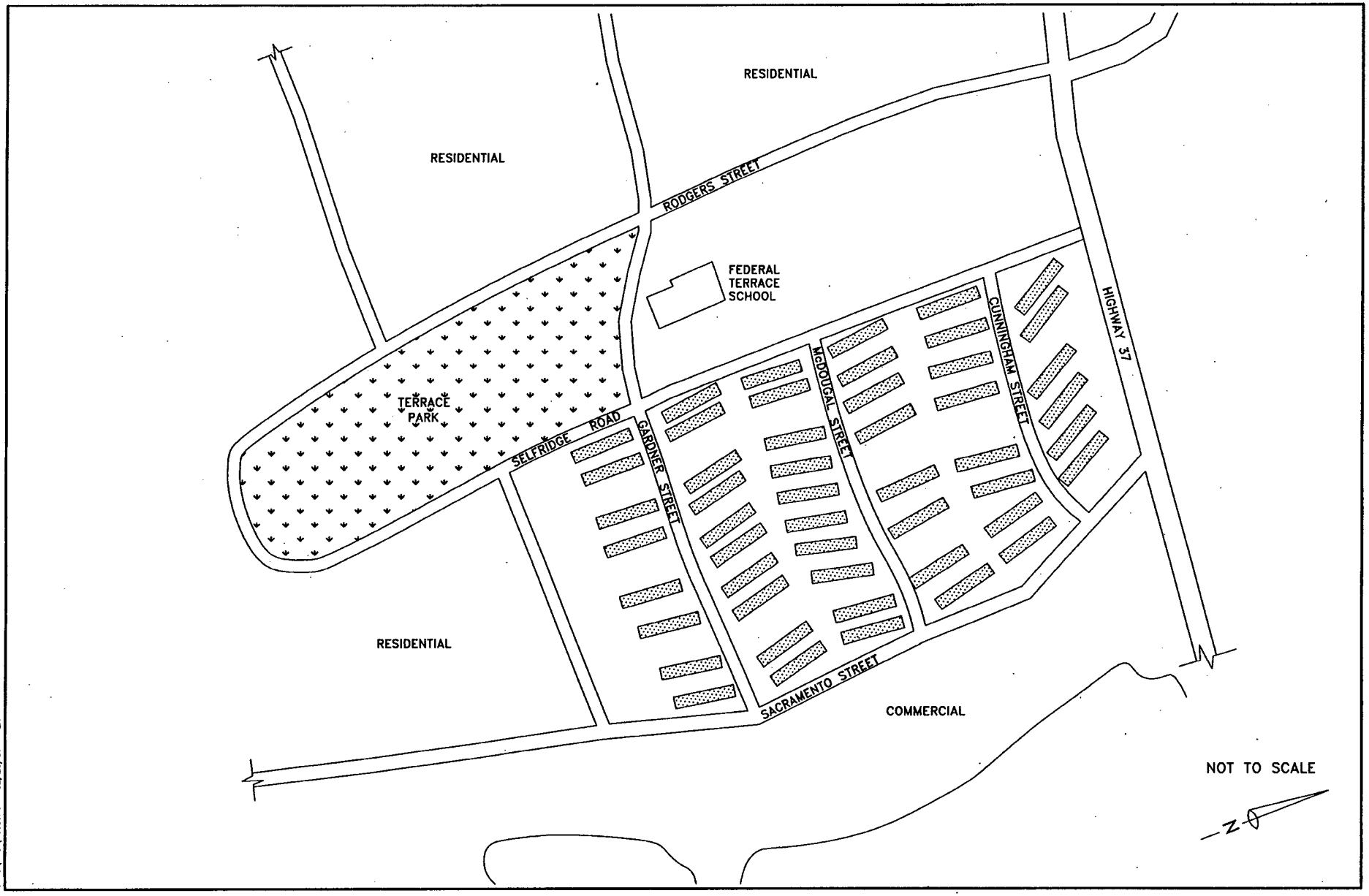
Railroad Spur

The railroad spur is a single-track line that connects the shipyard to the common carrier railroad network. This line crosses Mare Island Strait via the causeway and connects with the California Northern Railroad (CNR) just north of the intersection of Sereno Drive and Broadway in northern Vallejo (Figure 3-4). The connection to CNR, known as the Flosden Station, is via a 1,250-foot siding. The rail line crosses Wilson Street, Sonoma Boulevard, Redwood Parkway, and Sereno Drive and Broadway at grade and crosses Sacramento Street via an underpass.

3.1.3 Surrounding Land Uses

Mare Island Naval Shipyard

The shipyard is bordered by Mare Island Strait to the east, Carquinez Strait to the south, San Pablo Bay to the west, and Napa Marsh and historic diked marshlands to the north (Vallejo 1994c). The San Pablo National Wildlife Refuge lies between the northwest boundary of Mare Island Naval Shipyard



Roosevelt Terrace contains 600 residential units.

LEGEND:

Apartment buildings

Terrace Park

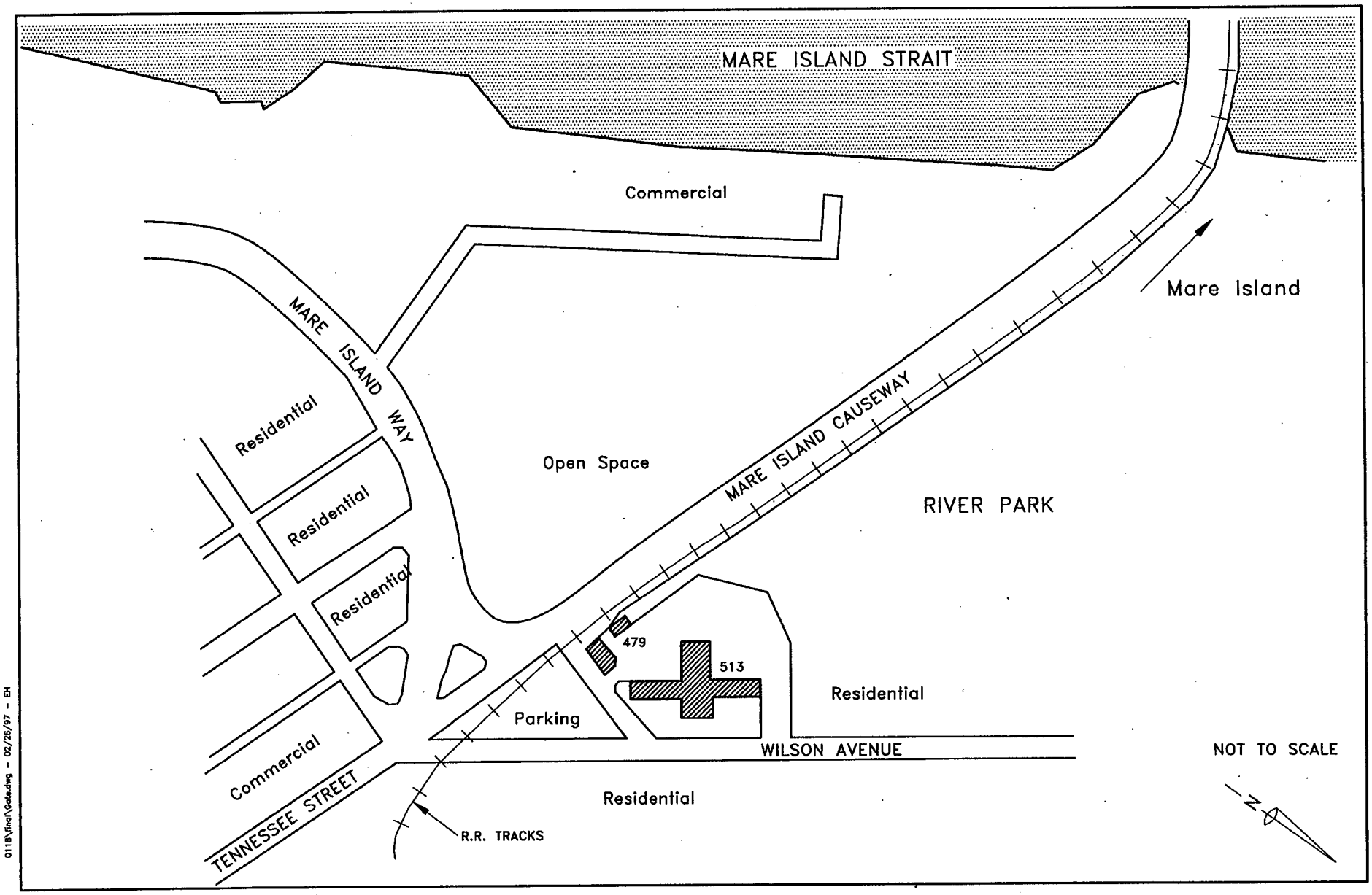
Developed by: Tetra Tech, 1995

Roosevelt Terrace

Mare Island, California

Figure 3-2

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The Main Entrance is one of two vehicular entrances onto Mare Island, and contains the badge and pass building and adjoining parking.

LEGEND:

Navy Buildings

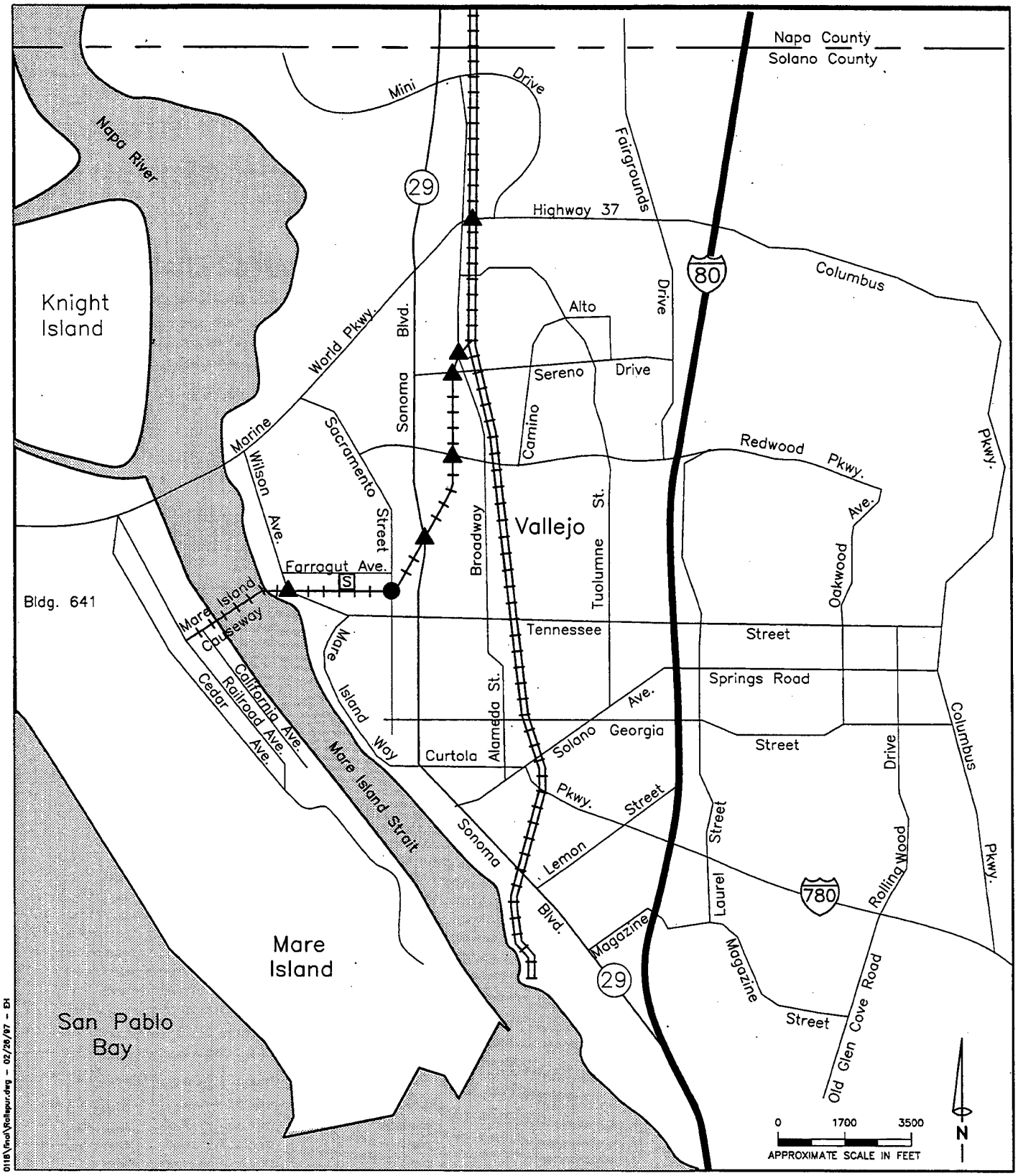
Main Entrance

Mare Island, California

Developed by: Tetra Tech, 1995

Figure 3-3

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The railroad spur extends from the Main Entrance north through Vallejo three miles, and connects to the Southern Pacific rail line. It passes next to one elementary school and has several at grade crossings.

LEGEND:

- S — Elementary School
- Railroad Underpass
- At Grade Crossing
- Navy Owned Railroad Spur
- Southern Pacific Track

Source: Tetra Tech, 1995

Railroad Spur

City of Vallejo, California

Figure 3-4

and Highway 37. Approximately 2 miles south of the shipyard, across the Carquinez Strait, are several residential areas to the east of Interstate 80 and industries to the west of Interstate 80. Views from the western side of the shipyard are of San Pablo Bay.

The most varied and intense development is on the Vallejo waterfront, paralleling the eastern side of the shipyard across Mare Island Strait. River Park is surrounded by Highway 37, the causeway, and Wilson Avenue. A marina, yacht club, and ferry terminal extend over the waterfront south of the causeway. Professional buildings, city buildings, and Waterfront Memorial Park line the opposite side of Mare Island Way. High, medium, and low-density residential areas are east of Wilson Avenue and along Mare Island Way in the hills overlooking the strait.

South of the Mare Island Way/Highway 29 intersection the waterfront is industrialized. The Vallejo Sanitation and Flood Control District (VSFCD) Wastewater Treatment Plant, Humane Society, Waster, and Vallejo Building Materials Company are among the larger facilities occupying the waterfront. The General Mills plant marks the end of the industrial development south of Lemon Street.

Several medium- and high-density single-family residential developments are within the hilly region directly across the strait from the southern-most end of the shipyard. Many of these homes have views of the shipyard and the Mare Island and Carquinez Straits.

Roosevelt Terrace

The area north of the Roosevelt Terrace annex across Highway 37 is a salt marsh. Small commercial businesses, including a restaurant/bar, liquor/video/food store, truck school, barbershop, and automotive shops are located east, directly across Sacramento Street, with marshlands located behind the businesses. Federal Terrace School and Terrace Park are immediately west of the annex, with residential neighborhoods farther west beyond these 2 facilities. An area of townhouses is located south of Roosevelt Terrace.

Main Entrance

The main entrance is bordered by single-family homes to the east and south, multiple-family residences to the north, and recreation/open space to the west. Tennessee Street, the main access route to this area, is bordered by commercial uses.

Railroad Spur

Mare Island Causeway to Wilson Avenue Segment

Land uses bordering this rail segment include a shipyard administration office, as well as private apartment buildings, open space, and marina. The railroad tracks run at grade along the road in this section, with no separating features. The track crosses Wilson Avenue at grade and without a barrier gate or roadway warnings.

Wilson Avenue to Sonoma Boulevard Segment

This segment of the railroad spur passes mixed-density residential developments including single-family homes, duplexes, and a small apartment buildings of fewer than 8 units. Commercial buildings face Tennessee Street, and apartment buildings are on Wilson Avenue between Farragut and Tennessee. An auto repair shop on Wilson Avenue separates the railroad and these apartments. South of Farragut Avenue is an elementary school adjacent to the railroad. Single-family houses and an apartment complex are south of the railroad tracks. The railway crosses Sacramento Street via an underpass.

Sonoma Boulevard to Broadway Segment

This segment of the spur includes 4 at-grade crossings. Adjacent land uses are commercial and light industry with vacant land west of the railroad near Broadway. Commercial uses include markets, retail stores, restaurants, auto sales, gas stations, auto repair, rental yards, and a lumberyard.

3.1.4 Land Use Plans and Regulations

City of Vallejo Plans and Regulations

Although Mare Island is within the Vallejo city limits, as a Federally owned property it has not been subject to local land use control; nevertheless, the Navy has imposed its own controls. As parcels are conveyed to Vallejo or other non-Federal entities, land use decisions regarding these parcels would be subject to Vallejo land use regulations under its General Plan and Zoning Ordinance. The Vallejo General Plan currently designates Mare Island as an employment land use area, which includes industrial, general commercial services, and professional office complexes (Vallejo 1983b). It does not include Mare Island in an enterprise zone. Following certification of this EIS/EIR, the city would amend its general plan to provide land use designations for areas on Mare Island consistent with the reuse plan. Property that reverts to the state and land that is transferred to other Federal agencies will not be subject to local land use controls.

Mare Island zoning will reflect future land uses. The reuse plan indicates that Vallejo will use the planned development approach described in *Part VI Planned Development Districts, Regulations and Procedures* of the zoning ordinance for the developed areas of Mare Island. This zoning district is intended to enable design and development flexibility in areas containing diverse land uses. More traditional zoning is anticipated for the conservation areas, such as the wetlands and regional park. The city's zoning classification of Resource Conservation (RC) may be applied to these areas.

San Francisco Bay Conservation and Development Commission

The authority to evaluate projects conducted, funded, or permitted by the Federal government is granted to coastal states through the Federal Coastal Zone Management Act (CZMA) of 1972, 16 U.S.C. §3501 *et seq.*, as amended. Under CZMA, any Federal projects or activities affecting the coastal zone must be consistent to the maximum extent practicable with the provisions of Federally approved state coastal plans. For Mare Island, the San Francisco Bay Plan is the adopted CZMA coastal management plan, and the Bay Conservation and Development Commission (BCDC) reviews Federal projects for consistency with the Bay Plan.

BCDC is a regional commission and planning agency created by the state legislature to provide a regional perspective for planning the development and conservation of San Francisco Bay. BCDC regulates San Francisco Bay development through implementing the San Francisco Bay Plan. BCDC has bay jurisdiction over all submerged lands and land subject to tidal action. This includes land up to the mean high tide line and marshlands up to 5 feet above mean sea level (MSL). Its shoreline band jurisdiction includes a 100 foot wide band adjacent to the edge of the Bay. At Mare Island, BCDC jurisdiction includes all areas within 100 feet inland of mean high tide, which is 2.81 feet National Geodetic Vertical Datum (NGVD), as well as all tidal marsh areas up to an elevation of 5 feet above mean sea level. BCDC requires permits for levee maintenance, extraction of materials, and placement of any type of fill in areas under its jurisdiction (BCDC 1995).

The San Francisco Bay Plan, developed by BCDC in 1968 and updated in 1997, contains policies protecting the bay's economic and natural resources and designates shoreline regional priority use areas. These policies guide permit decisions by BCDC and serve as the regionwide land use designations for the San Francisco Bay shoreline. BCDC priority designated areas include ports, airports, water-related industry, waterfront parks and beaches, and wildlife areas.

The recent revisions to the Bay Plan deleted the port priority and water-related industry use designations from Mare Island, except for the dredged material

disposal ponds which retain the water-related industry designations. A policy note in the Bay Plan giving priority for post-Navy uses of Mare Island to port or water-related uses also was deleted (Michaels 1997). The revised Bay Plan designates the dredge material disposal ponds as a water-related industry use area for dredged material disposal, and states that they should be used as a regional dredge material handling facility.

The dredge disposal ponds on Mare Island that were previously used for the disposal of dredged materials were retained as water-related industry priority use areas so that evaluation of continuing the designation could occur following completion of the LTMS. To mitigate any adverse impacts from continued use of the dredge disposal ponds, the 3 northernmost ponds were identified as wetland habitat for the salt marsh harvest mouse. The USFWS would manage this wetland habitat as part of the San Pablo Bay National Wildlife Refuge. Areas without priority designations in the Bay Plan are subject to the Bay Plan policies contained in Part IV: Other Uses of the Bay and Shoreline. These policies call for shore areas not proposed for priority use to be used for any purpose that uses the Bay as an asset and in no way affects the Bay adversely.

Once Navy property is conveyed to local ownership, BCDC's state jurisdiction requires permits for any fill, extraction of materials, or substantial changes in use of any water, land, or structure in the bay. Permits for priority use and water-related industry areas and for development within the 100-foot shoreline band would be granted or denied based on the appropriate Bay Plan policies for ports, water-related industry, water-oriented recreation, airports, and wildlife areas.

Tidelands and Submerged Land Regulations

The California State Lands Commission has jurisdiction over ungranted tidelands and submerged lands owned by the state and the beds of navigable rivers, streams, bays, estuaries, and inlets within its boundaries, Cal. Pub. Res. Code §6301. A substantial part of the presently low-lying areas of Mare Island were historically tide and submerged lands within the Napa River Straits and San Pablo Bay that have since been filled. This type of land, together with the unfilled tide and submerged lands that remain, are commonly referred to as public trust land subject to use restrictions by the Tideland Trust. This trust has been established by state law to protect public interests in commerce, navigation, fisheries, water-oriented recreation, habitat, and environmental study. The purpose of the trust is to assure that land that adjoins the state's waterways or land that is covered by those waters remains committed to water-oriented uses benefiting the greatest number of people.

Generally speaking, public trust lands are to be used for commerce, navigation, fisheries, water-oriented recreation, and preservation in its natural condition for habitat and study. The range of uses possible include but are not limited to harbor related uses, such as port facilities, warehouses, marinas, and shipyards; hospitality uses, such as hotels, restaurants, and other visitor serving facilities; and ecologically related uses, such as wetlands, wildlife preserves, open space, parks and greenways. Public trust lands on Mare Island include land that will revert to the state and land owned by the Navy that will be transferred to other Federal agencies. Figure 3-5 illustrates the location of Tideland Trust lands as determined by the Navy (US Navy 1994i).

Land Use Regulations Applicable to Surrounding Land Uses

City of Vallejo General Plan.

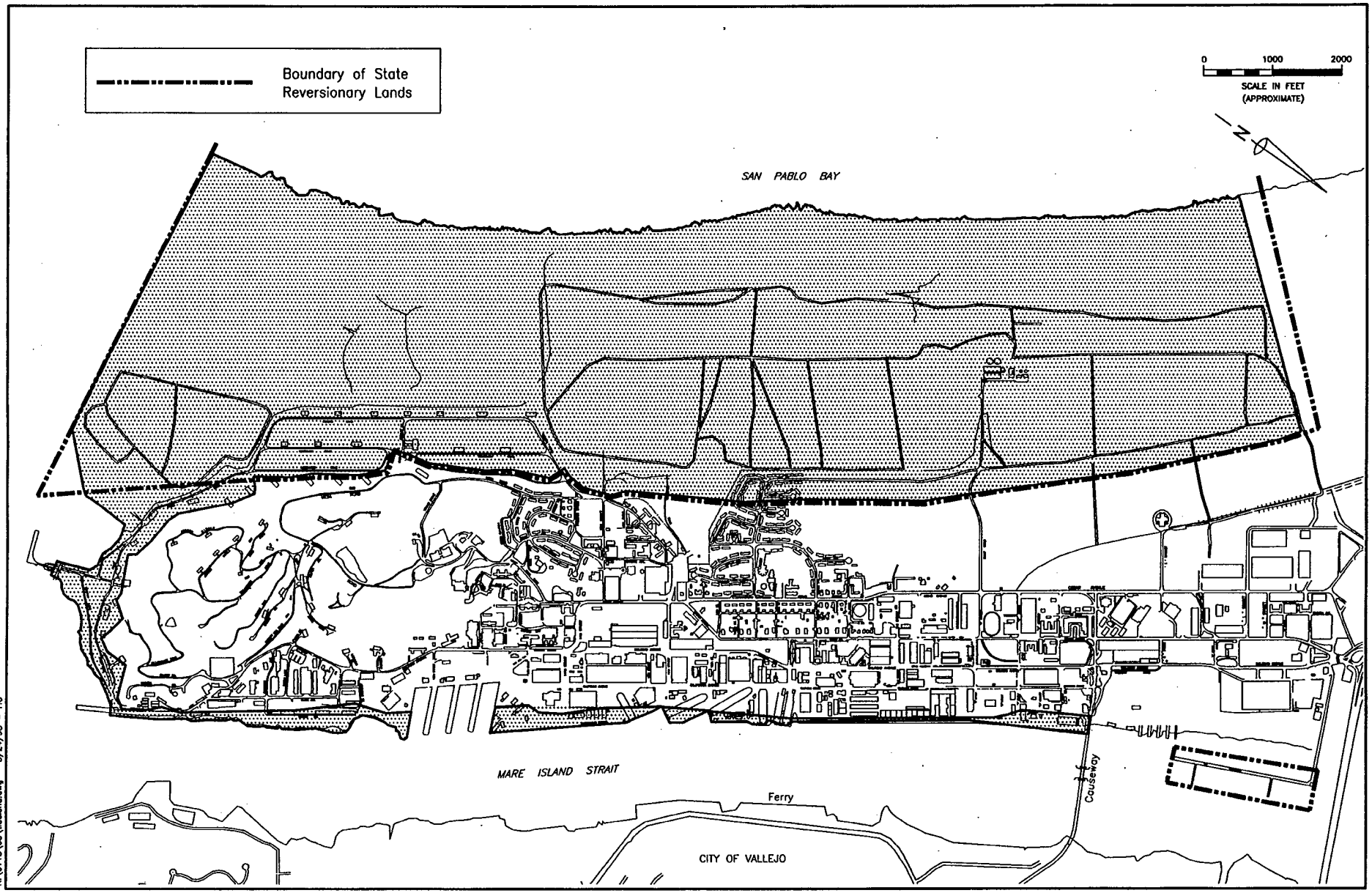
The area across Mare Island Strait from the shipyard is under the jurisdiction of Vallejo. The Vallejo General Plan designates the area south of Dutchman Slough as Residential and north of Dutchman Slough as Open Space. The Vallejo waterfront is designated as Open Space, Employment, and Commercial Waterfront (Vallejo 1983b). These land use designations are shown on Figure 3-6.

California Relocation and Property Acquisition Act of 1972.

As described in Chapter 2, the reuse plan proposed construction of a southern crossing to connect Mare Island to Vallejo. Such an action could displace existing residences or businesses. Should existing land uses be displaced, a relocation and assistance program would be required by the California Relocation Assistance and Property Acquisition Act of 1971, Government Code 7260 *et seq.*, for any displaced residences or businesses. This act establishes policies and practices for acquiring real property (including determining just compensation); for acquiring buildings, structures, and improvements; reimbursements for expenses incidental to transfer of title; and for reimbursement of property owner's court costs in certain well-defined situations. The act applies equally to all property owners regardless of race, color, religion, sex, or national origin.

Land Use Regulations Applicable to Roosevelt Terrace and Main Entrance

Roosevelt Terrace and the main entrance, as Federally owned properties, have not been subject to local land use control. As Federal surplus land, following conveyance of these facilities, Vallejo will have land use jurisdiction over these 2 properties. Roosevelt Terrace is designated High Density Residential by the Vallejo General Plan. The main entrance area is designated as Community Park in the General Plan and zoned RC (Resource Conservation).



LEGEND:

Lands Subject to Tideland Trust Land Use Restrictions

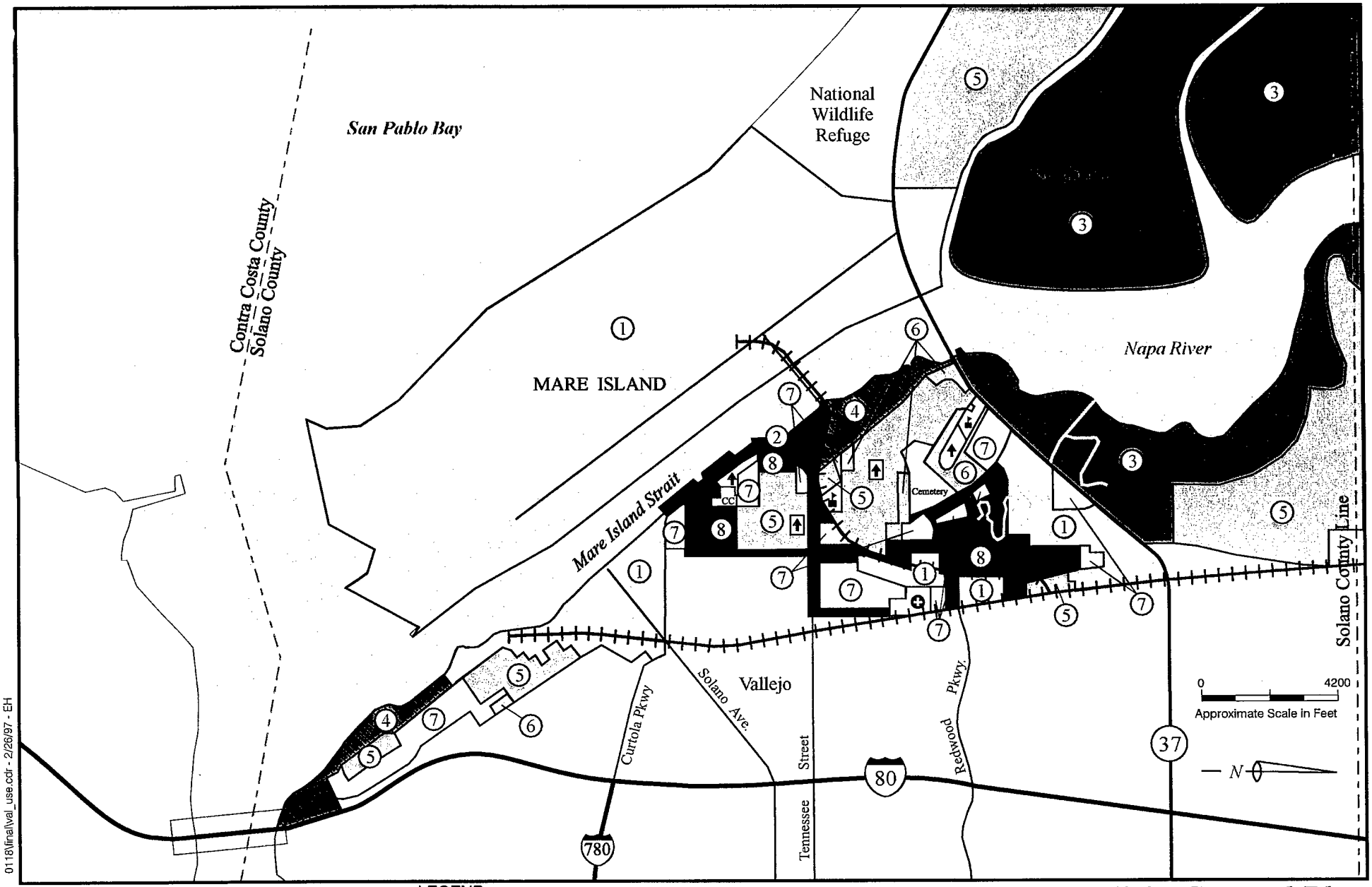
State Tideland Trust

Mare Island, California

Source: U.S. Navy, 1995

Figure 3-5

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The land use designations indicate planned land uses in Vallejo. Following transfer of Mare Island, the land use designation for the iland will be changed to reflect the Reuse Plan.

Source: Vallejo, 1983b

LEGEND:

1. Employment
2. Commercial Waterfront
3. Open Space
4. Open Space Community Park
5. Low Density Residential
6. Medium Density Residential
7. High Density Residential
8. Retail

Neighborhood Park
School
Medical

Vallejo General Plan Land Use Designations in Vicinity of Mare Island

Mare Island, California

Figure 3-6

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3.2 SOCIOECONOMICS

This section describes the regional socioeconomic setting and Mare Island's contribution to the regional economy. Socioeconomic conditions addressed include population, employment, income, housing, schools, and recreation. Each of these elements is presented with information on Napa and Solano Counties, followed by information on Vallejo and other locally affected communities.

Socioeconomic conditions are described for the baseline year of 1989, when the shipyard was operational. Socioeconomic data also are presented for 1980 to show historic trends, for 1994-1995 for a comparison during the base drawdown period, and as projected to 2020. These 2020 projections are based substantially on the Association of Bay Area Governments' (ABAG's) projections to 2015, which were created prior to completion of the reuse plan. ABAG's projections are useful because they present a picture of what economists expect in the future without implementing any reuse alternatives at the shipyard.

Region of Influence

Socioeconomic impacts would be felt most intensely at the local level, but because of the regional nature of the Bay Area's employment and housing markets, impacts on jobs, housing, and population also will be felt at the level of the Vallejo-Fairfield-Napa primary metropolitan statistical area (PMSA). This PMSA, consisting of Napa and Solano Counties, has been established as the ROI to analyze social and economic impacts. The PMSA designation indicates that Napa and Solano Counties demonstrate very strong economic and social links, in addition to having close ties to other portions of the San Francisco Bay Area (US Census 1990b).

Disposal and subsequent reuse of the shipyard is not expected to affect all areas of the ROI equally because of the distances involved. Given the proximity and historic interdependence between the City of Vallejo and the former shipyard, many of the socioeconomic effects will be realized locally within and around Vallejo. For this reason, data on Vallejo and areas under its sphere of influence (SOI) are presented where appropriate.

3.2.1 Shipyard Demographics

Employment

At the time of the closure decision, the Mare Island Naval Shipyard was the largest public employer in Vallejo. In 1989, the shipyard employed approximately 15,000 persons, 11,466 of whom were civilians (Table 3-3).

Civilian employment at the shipyard represented 27 percent of total employment in the City of Vallejo in 1989. Between 1989 and 1993, workforce reductions decreased shipyard employment by 41 percent to 8,800 military and civilian jobs. During the same period, Vallejo's unemployment rate rose steadily from 7 percent to 9 percent (California Employment Development Department 1993).

TABLE 3-3
MARE ISLAND EMPLOYMENT, 1989

Activity	Military	Civilians	Total
Naval Shipyard	390	10,426	10,816
Tenant Commands	3,312	1,040	4,352
Total	**3,702**	**11,466**	**15,168**

Source: US Navy 1989

In addition to jobs generated directly by the shipyard, it has been estimated that ancillary business created an additional 12,000 jobs in the local community that includes the Vallejo-Fairfield-Napa PMSA. (Vallejo 1994a; Governors Office of Planning and Research 1993; and US Navy 1989).

To estimate typical historic civilian workforce distribution at the shipyard by occupational category, ethnicity, and age, a survey was conducted in mid-1993 (see Appendix E; Table E-1 and Figures E-1 to E-3). Approximately 57 percent of the shipyard workers were blue-collar, including electricians, machinists, pipefitters, welders, and other trades. Technicians (15 percent) and professionals (14 percent) made up the next largest groups of employees, followed by administrative and clerical workers (12 percent). In addition, roughly 47 percent of the civilian workforce were between 40 and 50 years old, 30 percent were under 39 years old, and 23 percent were over 50. The civilian workforce was 77 percent white, 83 percent male, and 17 percent female. (For data on employment in the larger ROI for 1989-1990, see Appendix E, Table E-2.)

With respect to residency of civilian employees, approximately 33 percent lived in Vallejo, 68 percent lived in Solano County (including Vallejo), and 83 percent lived in the ROI (Solano and Napa counties). The remaining civilian workers lived in the counties of Alameda, Contra Costa, Lake, Marin, Sacramento, San Francisco, and San Mateo (place of residence based on data on Mare Island Naval Shipyard Employee Residence, 1993).

Housing

Mare Island military personnel lived on-base or off-base in Navy housing or in private housing. Mare Island's family quarters consisted of 1,083 units—600 units at Roosevelt Terrace and 483 on-island units (52 single-family and 431 multifamily) in the Coral Sea and Farragut Village housing areas. Roosevelt Terrace's World War II-era buildings included 384 units of permanent housing and 216 units of temporary accommodations on 29 acres. Of the housing on Mare Island, 21 of the single-family units are large houses in the historic area. The remaining single-family homes are in Farragut Village and Coral Sea Village. These units consist primarily of duplexes with some garden apartments. Most of these units are located on surplus land, but approximately 30 duplex housing units on the west side of Farragut Village are on state reversionary land.

Mare Island also contains over 2,000 dormitory beds in 13 buildings. Dormitory accommodations ranged from single rooms with private baths, to rooms for 1 to 4 people with shared bathrooms, to open bays with rows of beds that accommodate from 30 to 60 people (Vallejo 1994c; US Navy 1989). Military families and bachelor personnel who were not housed at Mare Island lived in other Navy housing in the San Francisco Bay Area or rented or bought homes in the community. Based on historic data provided by the Mare Island Naval Shipyard Housing Department, up to 500 families of military personnel stationed at Mare Island were living off-base in Vallejo in 1989.

Schools

Eighteen percent of the VUSD 1989-1990 student population had parents working at the shipyard or living at Mare Island (Table 3-4). Appendix E, Table E-3, presents detailed school enrollment information for 1989.

Recreation

The Mare Island complex offered numerous opportunities for indoor and outdoor recreation. Outdoor recreational facilities included 27 acres of parks and playing fields, including riding stables, a 9-hole golf course, fishing access, open space, and picnic areas. Indoor recreation facilities totaled 249,000 square feet and included movie theaters, swimming pools, gymnasiums, racquetball courts, and fitness centers (housed primarily in Rodman and Owen Centers). These recreational facilities were open to both military and civilian personnel employed at the facility and their families.

TABLE 3-4
ESTIMATED NUMBER OF STUDENTS
ENROLLED IN THE VALLEJO UNIFIED SCHOOL DISTRICT
Students Associated with Mare Island Naval Shipyard

	1989-90	1993-94
Children from Military Families:		
Mare Island[1]	263	450
Roosevelt Terrace	139	89
Off-base[2]	969	565
Total Children from Military Families	1,371	1,104
Total Children from Civilian Families	1,850	1,037
Total Children w/Mare Island Ties	3,221	2,141
Total VUSD Enrollment	18,014	19,412
Total Children w/Mare Island Ties As Percent of Total VUSD Enrollment	18%	11%

[1] Historically, Navy families could live in military housing at any of the Navy installations in the Bay Area. There was a long waiting list for on-base housing, and military families generally took the first available unit, which was often at a different Bay Area Navy installation. As the Bay Area bases closed, more families chose to relocate to the base where the spouse worked, resulting in the increase from 1989-1990 to 1993-1994.

[2] Approximately 90 percent of total military children living off-base has been estimated by VUSD as having Mare Island ties.

Source: Vallejo Unified School District 1990; Vallejo Unified School District 1994; Vallejo 1990a; Vallejo 1994d

3.2.2 Regional Economy

The level of employment and personal income in a region is key to the health of the regional economy and typically affects other socioeconomic indicators, such as changes in population and housing. Existing conditions for these measures of economic activity are described below.

Employment

The labor force and employed and unemployed persons for 1980 and 1995 are shown for the ROI in Tables 3-5 and 3-6. In 1995, the labor force for the 2 counties is estimated to total 230,000, with 211,000 persons employed. Unemployment rates for Vallejo, Solano, and Napa counties were 8.5 percent, 7.7 percent, and 6.9 percent, respectively (California Employment Development Department 1993). (See Appendix E, Table E-4.)

TABLE 3-5
1980 AND 1995 EMPLOYMENT FOR THE REGION OF INFLUENCE[1]
(Amounts in Thousands)

Employment	Vallejo-Fairfield-Napa PMSA		
	1980	1995	Absolute Change
Labor Force	157.1	230.3	46.6%
Number Employed	145.8	211.0	44.7%
Number Unemployed	11.3	19.3	70.8%

[1]Does not include proprietors, the self-employed, unpaid volunteers or family workers, domestic workers in households, and persons involved in labor management trade disputes. Employment reported by place of work.
Source: ABAG 1993; ERA

TABLE 3-6
EMPLOYMENT BY INDUSTRY
(Amounts in Thousands)

Employment	Vallejo-Fairfield-Napa PMSA				
	1980	1995	1995 Job Composition	Absolute Change	Annual Rate of Change
Agriculture & Mining	6.3	7.7	5%	22.0%	1.3%
Nonagricultural & Mining	120.3	161.7	95%	34.4%	2.0%
Construction	6.2	10.5	6%	69.4%	3.6%
Manufacturing	11.2	16.3	10%	45.5%	2.6%
Transportation & Utilities	6.1	7.2	4%	18.0%	1.1%
Wholesale Trade	2.0	4.9	3%	145.0%	6.1%
Retail Trade	19.1	32.7	19%	71.2%	3.7%
F.I.R.E.[1]	5.0	5.8	3%	16.0%	1.0%
Services	32.5	51.0	30%	56.9%	3.0%
Government	38.2	33.1	20%	-13.4%	-0.9%
Total All Industries	**126.6**	**169.4**	**100%**	**33.8%**	**2.0%**

[1]Finance, Insurance & Real Estate
Source: ABAG 1993; ERA

The economy of Solano and Napa counties historically has relied on 3 main employment sectors—government, services, and retail trade. As indicated on Table 3-5, the 1995 employment composition within the ROI shows the services sector as representing 30 percent of total employment. The services sector includes health, business, and amusement services. Government employment, which includes military jobs, makes up 20 percent of total ROI employment. Retail trade makes up 19 percent of the total ROI employment.

The 3 fastest growing sectors in terms of annual growth rate are wholesale trade (6.1 percent), retail trade (3.7 percent), and construction (3.6 percent). Government employment has declined by over 15 percent between 1980 and 1995, largely from the closure of the shipyard.

In Vallejo, approximately 34,700 workers were employed in 1995 (Association of Bay Area Governments 1993). Since "Projections '94" 1995 employment estimates included approximately 2,941 civilian shipyard workers at Mare Island, 1995 employment estimates in Table 3-7 have been adjusted to reflect the 80 employees performing caretaker activities at the former shipyard. In 1996, Vallejo had approximately 32,432 workers, including the 80 Mare Island workers. Major private nonfarm employer groups include the health services sector, eating and drinking establishments, and special trade contractors (Upclose Publishing 1991).

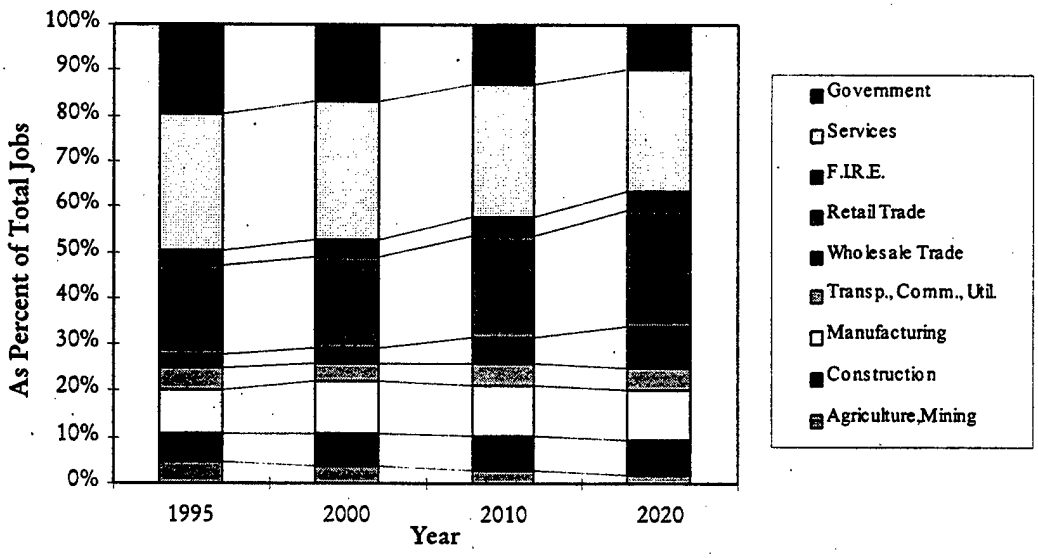
The Association of Bay Area Government's Employment projections for the ROI and Vallejo are presented in Table 3-7 and Figure 3-7. These projections assume a certain level of reuse of Mare Island through 2010 and do not incorporate the level of reuse projected in Section 4.2 by year 2020. (See also Appendix E, Table E-5.) Although services, retail trade, and government are the traditionally strong sectors in the ROI, it is projected that the wholesale trade sector would grow faster than the other sectors in the region. Wholesale trade is projected to grow at an annual rate of 2.8 percent between 1995 and 2000 and at a rate of 8.4 percent between 2000 and 2020 (ABAG 1993; ERA).

TABLE 3-7
EMPLOYMENT PROJECTIONS FOR THE CITY OF VALLEJO AND THE ROI

	1980	1995[1]	2000	2010	2020[2]
City of Vallejo (SOI)	34,875	31,859	38,450	48,690	61,657
Percent Change	-	-9%	19%	27%	27%
V-F-N PMSA[3]	126,616	164,866	198,090	267,020	360,649
Percent Change	-	29%	20%	35%	35%

[1] Employment figures adjusted to include 80 employees.
[2] Year 2020 projections assume the previous decade's growth rates.
[3] Vallejo-Fairfield-Napa PMSA consists of Napa and Solano Counties.
Source: ABAG 1993; ERA

FIGURE 3-7
JOB TRENDS IN THE ROI



Source: ABAG 1993; ERA

Personal Income

Based on the number of households and mean household incomes for the ROI by ABAG, regional personal income grew from $4.7 million to $7.9 million between 1980 and 1995. This represents a 66 percent increase, or an annual average growth of 3.4 percent. From 1995 to 2020, personal income is projected to increase at an annual average of 4 percent, from $7.9 million to $21 million. (See also Appendix E, Table E-6.)

Average salary per worker in the ROI grew at an annual average of 1 percent, from $32,500 to $37,000 in real terms (adjusted for inflation) between 1980 and 1995. This is projected to increase to $49,780 by 2020. Average per worker annual income growth between 1995 and 2020 is estimated to be 1.2 percent (ABAG 1993). Note that average annual regional personal income is projected to grow faster than average salary per worker because there will be more workers per household over time. (See also Appendix E, Table E-7.)

3.2.3 Population and Housing

Population

Recent Trends and Projected Population Growth. Between 1980 and 1995, the population within the ROI increased by 51 percent, from 334,402 to 506,600. Between 1995 and 2020, the population within the ROI is expected to increase

to 816,500 people. This increase includes population associated with Mare Island, estimated at 80 shipyard workers in 1996 (ABAG 1993; ERA). Population growth and forecasts of future population levels within the ROI are presented in Appendix E, Figure E-4 and Table E-8.

Solano County will continue to be one of the population and employment growth centers in the San Francisco Bay Area. This is largely attributable to the county's strategic location at the northeastern edge of San Francisco Bay and its proximity to fast-growing Sacramento. Between 1980 and 1995, the population in Solano County increased by nearly 64 percent, from 235,000 to 385,000 residents. Solano County is expected to have the greatest population increase between 1995 and 2020, increasing by about 272,000 people (71 percent) during this period (ABAG 1993; Brady, R. 1995).

Vallejo experienced substantial population growth between 1980 and 1995, reflecting the trend in Solano County as a whole. Population increased 54 percent, from 81,599 in 1980 to 125,300 in 1995, a change of 43,700 residents. Vallejo's growth is expected to slow considerably between 1995 and 2020, with the addition of only 11,700 residents between 1995 and 2020 (ABAG 1993).

Housing

Vallejo is likely to be affected by Mare Island reuse more than any other city in the ROI. Detailed data on Vallejo's housing supply, costs, and other characteristics are therefore provided, as well as the projected number of households for the larger ROI (Napa and Solano counties).

Existing Housing Supply and Characteristics. Table 3-8 presents Vallejo's 1990 and 1994 housing supply. In 1994, the city had 40,830 housing units, approximately 58 percent of which were owner-occupied, 36 percent were renter-occupied, and 6 percent were unoccupied. In addition, 70 percent of Vallejo's housing stock was composed of single-family homes, 80 percent of which were constructed prior to 1980. Most of the new development was concentrated in 2 large planned developments, Northgate and Sky Valley, which together contributed over 3,000 additional units between 1990 and 1995 (US Census Bureau 1990b; California Department of Finance 1995).

Number of Households and Average Household Size. The average household size and household growth within the ROI are presented in Table 3-9. Between 1980 and 1995, the ROI added 54,230 new households, a 46 percent increase from the 1980 figures (Association of Bay Area Governments 1993).

TABLE 3-8
1994 HOUSING UNIT TOTALS IN VALLEJO

Type of Tenure	1990		1994	
	Number of Units	As % of Total	Number of Units	As % of Total
Owner-occupied	23,132	58%	38,655	95%
Renter-occupied	14,251	36%	Incl. above	-
Vacant	2,519	6%	2,176	5%
Total	39,902	100%	40,831	100%

Source: CA Dept. of Finance, Demographic Research Unit and US Census Bureau

TABLE 3-9
AVERAGE HOUSEHOLD SIZE AND NUMBER OF HOUSEHOLDS, 1980-2020

Location	1980	1995	2000	2010	2020[1]
Persons per Household					
Vallejo (SOI)	2.66	2.95	2.96	2.95	2.95
Solano County	2.82	2.88	3.04	2.95	2.95
Napa County	2.55	2.58	2.55	2.51	2.51
Number of Households					
Vallejo (SOI)	30,078	41,150	44,770	46,390	44,119
Solano County	80,426	126,600	144,860	179,590	214,320
Napa County	36,624	44,680	47,940	54,410	60,880
V-F-N PMSA	117,050	171,280	192,800	234,000	275,200

[1]ERA's 2020 projections assume the previous decade's average persons per household remains constant.
Source: ABAG 1993

Future Households and Housing Potential. Solano County will add about 87,720 new households between 1995 and 2020. Strong housing production in the Solano County area is attracting a local labor force that is predicted to exceed local job demand. In the near term, household growth is expected to be clustered in the major growth centers of Fairfield, Vacaville, and Vallejo. Combined, these 3 communities account for more than three quarters of total Solano County projected household growth (ABAG 1993).

The household forecast for Napa County between 1995 and 2020 indicates a strong demand for housing tempered by infrastructure limitations. An additional 16,200 households are expected by 2020 in Napa County. Although these numerical increases are the lowest of any county in the Bay Area, they reflect Napa's historically low population (ABAG 1993).

Vacancy Rates. During 1994, housing vacancy rates for Vallejo, Solano County, and Napa County were 5.3 percent, 4.7 percent, and 6.1 percent, respectively (California Department of Finance 1995). A vacancy rate of 5 percent generally is considered normal to allow for turnover of units. (See Appendix E, Table E-9.)

Housing Cost. The average home resale price for Vallejo property was $139,100 in 1994, according to the Northern Solano Board of Realtors. Vallejo's housing resale prices are lower than prices in Solano and Napa counties as a whole, where average home prices ranged from $160,200 to $232,000, respectively. (See Appendix E, Table E-10.)

In 1994, apartments in the older neighborhoods rented for about $395 to $450 per month for a 1-bedroom, 1-bath unit, and from approximately $450 to $600 per month for a 2-bedroom unit. Single-family homes in these neighborhoods generally rented for about $575 to $1,200. Apartment rents in the city's newer areas are higher and generally ranged from about $800 to $1,200 per month (Weaver 1995).

3.2.4 Schools

The 1990 Educational Facilities Element of the Vallejo General Plan indicates that many of the existing Vallejo school sites are undersized for their enrollment. Average class sizes for staffing purposes are as follows: kindergarten, 29 students; grades 1 to 6, 30 students; and grades 7 to 12, 25 students. According to the VUSD, all secondary level classes are typically larger than the average class sizes recommended for staffing purposes.

State standards generally calculate the capacity of each district school at a greater number than the district's standards. District schools must therefore operate at a capacity in excess of district standards before state funding is received. To operate the district's schools based on district educational standards, local funding of school facilities is necessary.

Table 3-10 presents enrollment versus capacity in Vallejo schools in 1994. According to this data, 1,583 students were taught in temporary classrooms. However, this does not account for the necessary support programs, such as reading, speech, and resource specialists, that are housed in temporary spaces.

If these support programs were to be relocated in permanent rooms, the number of students housed in temporary classrooms would increase. The VUSD uses 180 temporary buildings, which could accommodate 2,100 students, if support programs were relocated. In effect, 2,100 students instead of 1,583 are being housed in temporary classrooms.

TABLE 3-10
1994 VALLEJO UNIFIED SCHOOL DISTRICT
ENROLLMENT VERSUS CAPACITY

School	1994 Enrollment	1994 Capacity	No. of Students in Temporary Classrooms
Beverly Hills	406	418	-
Cave	502	538	-
Cooper	784	816	-
Davidson	284	329	-
Everest	17	17	-
Farragut	435	359	76
Federal Terrace	660	509	151
Glen Cove	890	936	-
Highland	817	736	81
Lincoln	330	299	31
Loma Vista	608	539	69
Mare Island	381	478	-
Mini	990	885	105
Patterson	728	597	131
Pennycook	952	896	56
Steffan Manor	808	805	3
Wardlaw	824	856	-
Widenman	719	776	-
Total Elementary	**11,135**	**10,789**	**346**
Franklin	918	725	193
Solano	1,046	950	96
Springstowne	1,249	1,050	199
Vallejo	1,046	800	246
Total Junior High	**4,259**	**3,525**	**734**
Hogan	1,620	1,215	405
Vallejo	1,602	1,540	62
Peoples	271	235	36
Total High School	**3,493**	**2,990**	**503**
Total K-12	**18,887**		**1,583**

Source: Yeager 1994; ERA

In addition, the VUSD policy is to operate schools on a traditional or single track year-round calendar; multitract years are to be used only in the case of overcrowding. The district operates 8 elementary schools on a multitrack year-round calendar due to overcrowding. The year-round calendar at the 8 schools provides 1,644 in additional capacity. The students housed in the capacity created by the multitrack year-round calendar should be counted as

being housed in temporary classrooms. Total students housed in temporary classrooms would be 3,744, or 20 percent of 1994 enrollment.

3.2.5 Recreation

Solano and Napa counties provide numerous recreational opportunities. Sources of recreation common to both counties include several golf courses, marinas and associated water sports, campgrounds and parks, outdoor playing fields and courts, and visitor and community centers. Significant recreational activities in Napa County include visiting the more than 500 wineries in the upper Napa Valley area and riding the Wine Train, which offers dinner tours of the valley.

Recreational activities enjoyed more exclusively include sailing and yachting and visiting the Marine World theme park. The Greater Vallejo Recreation District (GVRD), whose jurisdiction covers areas in and around Vallejo, operates and maintains numerous parks and recreational/cultural facilities.

3.2.6 Environmental Justice

On February 11, 1994, President Clinton issued the Executive Order on Federal Actions to Address Environmental Justice in Minority and Low-Income Populations (E.O. 12898). This order requires that:

> "Each Federal agency shall analyze the environmental effects, including human health, economic, and social effects, of Federal actions including effects on minority communities and low-income communities, when such analysis is required by NEPA. Mitigation measures outlines or analyzed in an environmental assessment, environmental impact statement, or record of decision, whenever feasible, should address significant and adverse environmental effects of proposed Federal actions on minority communities and low-income communities."

Vallejo has been established as the relevant region of influence for analyzing environmental justice issues because the impacts associated with disposal and reuse would occur primarily at the local or neighborhood level. Demographic information on ethnicity, race, and poverty status for Vallejo therefore has been included in this section. A discussion of environmental justice and potential impacts from disposal and reuse is presented in Section 5.6.

Vallejo has a diverse ethnic population (Table 3-11). Based on 1990 census data, 50.4 percent of the city's population is Caucasian, 21.3 percent is African American, 19 percent is Filipino, 4 percent is other Asians and Pacific

Islanders, and the remaining 4.5 percent is other groups. Of the total city population, persons of Hispanic origin make up 10 percent. Persons of Hispanic origin can be of any race.

TABLE 3-11
RACE/ETHNIC COMPOSITION AND POVERTY STATUS, CITY OF VALLEJO, 1989-1990

Race/Ethnicity	Total Population City of Vallejo		Persons Below Poverty Level[1]	
	Number	As % of Total	Number	As % of Total
White	55,009	50.4%	3,962	44.0%
Black	23,226	21.3%	3,277	36.4%
Amer. Indian, Eskimo, Aleutian	823	0.8%	129	1.4%
Asian or Pacific Islander	25,101	23.0%	1,154	12.8%
Other Race	5,040	4.5%	485	5.4%
Total Population	109,199	100.0%	9,007	100.0%
Hispanic (may belong to any race)	11,201	10.3%	1,137	12.6%

[1] Persons for whom poverty status is determined.
Source: US Census Bureau 1990a

Approximately 9,007 residents (8 percent of the city's population) have been classified as living in poverty (US Census Bureau 1990a). The Census Bureau determines poverty-status for families and individuals based on 48 threshold variables, including income and amount spent on food, family size, number of children under 18, and number of family members over 65 years of age. The average poverty threshold for a family of 4 persons was $12,674 in 1989. Of the 9,007 residents classified as poor, Blacks, American Indians/Eskimo/Aleutians, and Hispanics are disproportionately represented in Vallejo. For example, 36.4 percent of poor residents in the city are Black, while total Black population in the city is only 21.3 percent. Therefore, Blacks are over-represented in the city's poor population.

3.3 PUBLIC SERVICES

This section describes the law enforcement, fire protection, medical, and emergency medical facilities and services at the former Mare Island Naval Shipyard and in Vallejo. Public services are important for protecting life and property from fire and crime and for treating injuries, illnesses, and diseases. The ROI for this section includes Vallejo and Mare Island because much of the Mare Island Federal surplus property will be conveyed to the city. The city limits of Vallejo were selected as a geographical and jurisdictional boundary because of Vallejo's proximity to Mare Island. The same ROI was selected for hospital services due to the close proximity of the city and the shipyard.

Prior to closure, the Navy provided all public services on Mare Island, including the Main Entrance area, while Vallejo provided services to Roosevelt Terrace. Figure 3-8 shows the locations of medical services, fire stations, and police stations at the shipyard and in Vallejo. The following description identifies preclosure services provided on Mare Island and those that are being provided since base closure.

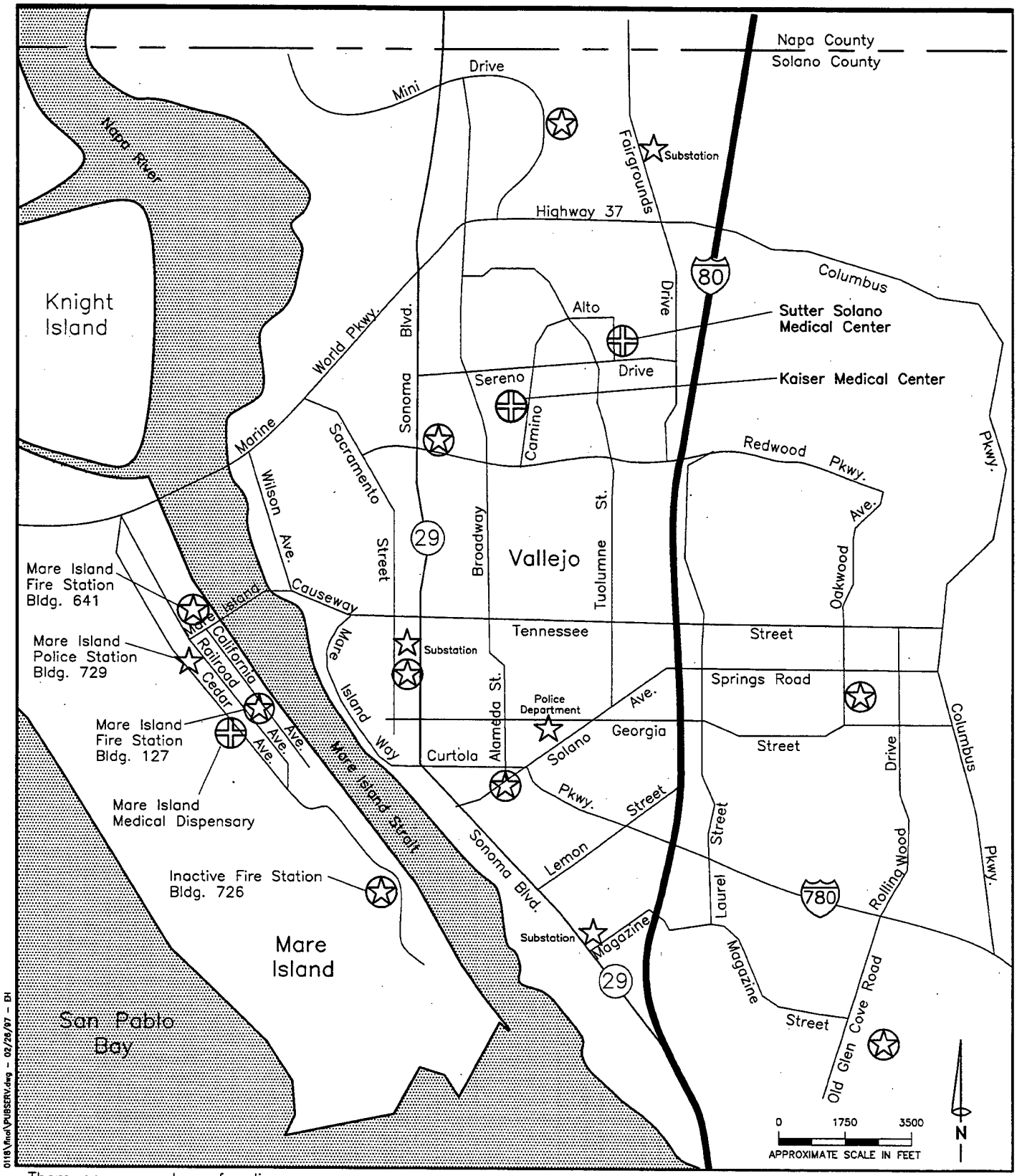
3.3.1 Law Enforcement

Mare Island

The Mare Island police station was in Building 729, with some auxiliary functions in Building 565. The station housed the Mare Island police force, which was responsible for police functions and some of the shipyard security functions, such as staffing shipyard entrances. Approximately 70 personnel were on the police force, including 49 sworn officers. The force had 17 vehicles, mostly 4x4s, and 3 boats. Building 729 had 2 fully-equipped holding cells (Vallejo 1994c; Whitehead 1994).

The Mare Island police force shared responsibility for law enforcement on the waters with the Coast Guard. The force had mutual aid agreements with the Coast Guard for search and rescue and narcotics investigations, with the California Highway Patrol for quick response to accidents on Highway 37, and with the Vallejo Police Department for narcotics and explosives calls (Vallejo 1994c).

Prior to closure of the Mare Island Naval Shipyard, the shipyard was under exclusive jurisdiction of the Navy and law enforcement was provided to the base mainly by the Mare Island police force, as described above. Since closure of the base, the shipyard is under concurrent jurisdiction of the Navy and Vallejo; consequently law enforcement is accomplished jointly by



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There are a number of police, fire, and medical facilities that serve Mare Island and Vallejo.

LEGEND:

- Police Department and Substations
- Fire Station
- Medical Facility

Public Services

Mare Island and City of Vallejo, California

Developed by: Tetra Tech, 1995

Figure 3-8

the Navy and Vallejo. Federal employees are providing security on Mare Island, and the Vallejo Police Department is handling law enforcement issues (Johnson 1997). Following conveyance, the Vallejo police department will be responsible for providing police services on Federal surplus land conveyed to Vallejo. It is anticipated that Vallejo also will provide law enforcement services to Federal surplus land conveyed to other non-Federal entities.

Off-island

The Vallejo Police Department (VPD) provides services to Roosevelt Terrace and elsewhere in the city. The VPD has 224 sworn personnel, 127 of whom are uniformed officers (Stone 1994). The department uses motorcycles, vans, pickup trucks, and 4-door sedans for enforcement. The department has mutual aid agreements with the California Highway Patrol, Solano County, Napa County, and the cities of Napa, Fairfield, and Benicia (Lyons 1994). The VPD's Crime Prevention Bureau is responsible for evaluating safety features of new development proposals and for public education programs.

3.3.2 Fire Protection

Mare Island

The main fire station at Mare Island was in Building 127, built in 1992, and another station was in Building 641. The Mare Island Fire Department (MIFD) had 8 vehicles and 3 boats serving the shipyard. The department used 2 initial attack engines, 1 100-foot aerial ladder truck, 1 ambulance, 1 dewatering truck, and 1 fireboat. Reserve vehicles included 2 engines, 1 ambulance, and 2 Navy tugboats. A third fire station, Building 726, was not in use at the time of closure.

The MIFD operated in 2 shifts, with 19 firefighters on duty during each shift. Four chief officers, 3 fire inspectors, and 1 administrator were also employed by the department. The main functions of the MIFD were fire protection and prevention, medical aid, hazardous materials response, and citizen assistance. Mutual aid agreements existed between the MIFD and the Vallejo Fire Department (VFD). In a typical year, the department responded to more than 800 calls, most of which were fire calls and medical aid calls (Patterson 1994). (Fire hydrant infrastructure on Mare Island is discussed in the utilities section.)

No formal agreement has been undertaken between the Navy and Vallejo regarding fire protection since closure. The Navy is providing fire protection

services to much of the site, while the Vallejo Fire Department is providing fire protection services to leased areas (Johnson 1997).

Off-island

The VFD is separated into fire prevention, fire suppression, and training. The VFD has 97 full-time paid employees. There are 6 fire stations with 7 engine companies. The VFD has 1 ladder truck stationed in the city. A seventh fire station is expected to be constructed within 2 years. A minimum of 25 firefighters and 1 chief officer are on duty at all times.

Vallejo currently has 2 fire inspectors. Mutual aid agreements are with Mare Island and the cities of American Canyon, Benicia, and Crockett (Keener 1994). The fire prevention unit is responsible for regulations, investigations, inspections, and public education.

3.3.3 Medical Services

Mare Island

The medical dispensary at Mare Island was in Building 201 and provided outpatient care services for military personnel, active duty dependents, and qualified retired personnel and dependents. Services were mainly occupational health and preventative care but also included pediatric care. The dispensary provided emergency care but was open only during daytime hours. The resources available at this facility included a fully operational laboratory, x-ray facilities, pharmacy, and dental facilities (Mesina 1994; Vallejo 1994c). Inpatient care for persons receiving military medical benefits was provided at Travis Air Force Base, approximately 25 miles from Mare Island.

Following base closure, the medical dispensary at Mare Island was closed, and it has been subsequently leased by the Veterans Administration for use as a clinic.

Off-island

Medical services for community residents are provided by Kaiser Medical Center, Sutter-Solano Medical Center, and First Hospital of Vallejo. Kaiser and Sutter-Solano Hospitals operate full-service 24-hour emergency rooms and are licensed to provide 231 and 108 beds, respectively (Richardson 1994; Rosette 1994). First Hospital of Vallejo is a psychiatric hospital, licensed for 61 beds (Fields 1994). Hospital capacity in Vallejo currently exceeds demand and would be sufficient to service military medical patients from Mare Island (Graham 1994).

3.3.4 Emergency Medical Services

Mare Island

Emergency medical services for Mare Island were provided by MIFD, which would dispatch ambulances with qualified personnel to all medical-related emergency calls on the island. The medical dispensary also had 2 backup ambulances. The MIFD provided emergency medical transportation to Kaiser and Sutter-Solano hospitals, both about 10 miles from the shipyard (O'Hara 1994).

Since closure, emergency medical services at Navy sites on Mare Island are being provided by MIFD. Emergency medical services to leased sites are being provided by the VFD. While no formal cooperative agreement exists between the Navy and City of Vallejo for providing emergency medical services, the Navy would contact the VFD for emergency medical services of a more serious nature (Johnson 1997).

Off-island

The VFD is the first responder to all emergency medical service calls in Vallejo. Patients are transported by Baystar Ambulance Company and Medic Ambulance Company to the emergency rooms of Kaiser and Sutter-Solano Medical Centers (Keener 1994).

3.3.5 Plans and Policies

The City of Vallejo has a general plan policy that new developments pay for the added cost of public services they may require. The policy for Mare Island included in the latest general plan update is to encourage revenue generating uses to offset the cost of providing and maintaining public services to the island.

3.4 CULTURAL RESOURCES

This chapter discusses the archeological and historical background data pertinent to Mare Island Naval Shipyard. Separate sections of this chapter present brief summaries of the archival research undertaken and the status of archeological, ethnographic, and historical knowledge as currently understood for the former shipyard. Following this, the results of both field and archival research will be presented for both prehistoric and historic cultural resources.

The term "cultural resources" includes any object, site, area, building, structure, or place that is archeologically or historically significant, or that exhibits traditional cultural value (e.g., properties sacred to Native Americans or other ethnic groups). The definition includes assets significant in the architectural, scientific, engineering, economic, agricultural, educational, social, political, military, or cultural annals of California. For the purpose of this analysis, a significant property is one that meets the criteria for listing in the National Register of Historic Places (NRHP).

The ROI for cultural resources is the area defined by the boundaries of the Mare Island Naval Shipyard as well as Roosevelt Terrace, the Main Entrance, and the rail line corridor in Vallejo.

3.4.1 Cultural Resources Studies

Since the mid-1970s, numerous cultural resource surveys have been conducted at Mare Island, all designed to identify properties that meet the eligibility criteria for listing in the NRHP.

Archeological Studies at Mare Island

All of Mare Island was intensively surveyed for archeological resources in 1983-1984 (Roop and Flynn 1986). Neither the Main Entrance nor Roosevelt Terrace have been surveyed for archeological resources. Such a survey is unwarranted as both areas have been greatly disturbed by grading and building construction. The ground surface, for the most part, is obscured by buildings, pavement, and landscaped grounds.

Archeological studies that pertain directly to Mare Island include those of Nelson (1907), Pilling (1949), Flynn (1980), Roop (1984), Roop and Flynn (1986), Brown and Maniery (1994), Maniery and Baker (1995), and Allan and Self (1996a and 1996b). From these surveys, 7 historic and prehistoric archeological sites have been formally recorded on Mare Island.

Nelson first visited Mare Island in 1907 and recorded prehistoric shell midden sites CA-SOL-232 (containing burials) and CA-SOL-233. In 1949, Pilling

completed a record of "shell mound" site CA-SOL-17, based solely on unpublished notes on file at the University of California at Berkeley.

Flynn's 1980 archeological survey was conducted on the southwestern portion of the island as part of a mosquito abatement project (Flynn 1980). Sites CA-SOL-17 and -233 were relocated and rerecorded during this effort. Roop and Flynn (1986) conducted an archeological resources survey of the entire island in 1983. This survey resulted in locating remnants of 2 sites recorded by Nelson in 1907—CA-SOL-232, a shell midden/burial site on the island's eastern side, and CA-SOL-233, a shell heap on the island's west side. In addition, Roop and Flynn (1986) identified 7 other areas where prehistoric midden remained, located around Buildings A43-45, within Alden Park, Chapel Park, and Mariner Park on the island's western edge and around northern housing areas on Mare Island. Allan and Self (1995) conducted subsurface testing at the 7 prehistoric midden sites identified by Roop and Flynn (1986), as well as at the recorded locations of SOL-17 and SOL-233. Except for a single obsidian flake, no conclusive evidence of prehistoric cultural material was recovered in any of the subsurface tests.

Roop and Flynn (1986) also identified 55 areas as having the potential for historic archeology based on archival research. These areas were drawn on a map but were never recorded formally because, in most cases, development and fill cover any historic archeology. Brown and Maniery (1994) monitored, recorded, and evaluated historic properties at the south end of Mare Island. They recorded 6 archeological resources, 2 of which were determined eligible for listing on the NRHP.

In 1995 Maniery and Baker reexamined the historical archeological database at Mare Island, using previous work, historical maps, and other primary information to determine where important historic archeology might be located. Sensitive areas then were field checked, and 2 locations with surface archeological evidence were recorded. All other areas with historic archeological potential were treated as 1 single archeological site, comprised of 28 features. These features were evaluated as being potentially eligible and were included as part of the Mare Island Historic District; this historic district includes both architectural and archeological properties and is discussed below under "Architectural Studies."

Archeological Studies in the Vicinity of Mare Island

Surveys conducted in Vallejo along the eastern edge of the Napa River/Mare Island Strait include Nelson (1907), Shkurkin (1962), Holman & Chavez (1977), Fredrickson (1978), and Adams (1984a, 1984b). From these surveys, 4 sites were formally recorded in Vallejo. They consist of disturbed shell

middens, recorded as sites CA-SOL-234, 235, 236, and 248. These sites are outside the ROI for the Navy disposal action and all reuse alternatives.

Architectural Studies

Numerous studies have been conducted to identify and evaluate the significance of buildings, structures, and formal landscapes at the Mare Island Naval Shipyard.

In 1962, the State of California recognized the historical significance of Mare Island Naval Shipyard by designating it State Historic Landmark No. 751. (CDPR 1984)

In 1974, George R. Adams prepared a survey of historic buildings and structures on Mare Island. This survey resulted in the designation of Mare Island as a National Historic Landmark under the title "Mare Island Naval Shipyard" (Adams, 1974). That evaluation resulted in the Secretary of the Interior designating the Mare Island Naval Shipyard Historic District a National Historic Landmark (NHL) in 1976. The NHL is an exclusive designation, reserved for properties that are of national importance in American history, architecture, archeology, engineering, or culture. An NHL is automatically listed in the NRHP but only a small fraction of properties in the NRHP have been designated an NHL. At that time approximately 52 of the buildings and sites, mostly within 4 small districts (the older Industrial and Residential Area Historic District and the Marine Corps, Hospital, and Ammunition Depot Historic Districts) were included in the NRHP, thereby recognizing the district's historical significance at the state, local, and national level. Three of these buildings since have been demolished; as a result 49 buildings and structures retain the NHL designation.

In 1985, Kenneth Cardwell prepared the "Historical Survey of Mare Island Naval Complex" for the Mare Island Naval Shipyard Facilities Planning Branch (Cardwell 1985). Cardwell's survey expanded the historic landmark boundaries into 5 historic districts, designated as the Shipyard Historic District, the Residential Historic District, the Naval Ammunition Depot Historic District, the Hospital Reservation Historic District, and the Marine Barracks Historic District. The final draft of this survey, prepared in 1986, was concurred with by the National Park Service, Western Regional Office, and the California State Historic Preservation Office (SHPO) but was not formally submitted to the Keeper of the National Register.

In 1995, JRP Historical Consulting Services, with PAR Environmental Services, prepared the "Historic Context for evaluating Buildings, Structures, Historic Archeological Sites, and Landscape features at Mare Island." This historic context was the basis for preparing an expanded National Register of

Historic Places nomination. In June 1995, JRP and PAR prepared a NRHP nomination for a historic district, the boundaries for which differ from previous studies and include a substantially greater list of contributing buildings, as well as historic archeological sites and landscape elements. The resource was identified as the "Mare Island Historic District" and was nominated to NRHP in 1996 (JRP 1996). The principal difference between the 1996 nomination and earlier efforts is that the revised Mare Island Historic District includes properties associated with the role of Mare Island during World War II, arguably the most important period in its history, at least within the context of military history, and it includes historic archeological properties and landscape elements. The addition of World War II properties expands greatly the geographic extent of the district, essentially filling in the blanks between the smaller districts identified by the NHL and by Cardwell. The Mare Island Historic District includes far more buildings and structures, an increase attributable chiefly to the inclusion of World War II-era properties, which account for over half the total. This historic district also includes as contributors a large number of small buildings, such as garages and utility buildings, that were overlooked in the Cardwell survey, even though most were built prior to 1936. These smaller buildings and structures, while not individually distinctive, contribute to the sense of time and place of the historic district and are judged to be contributing elements, except where they have lost integrity. The Mare Island Historic District was listed on the NRHP on January 21, 1997.

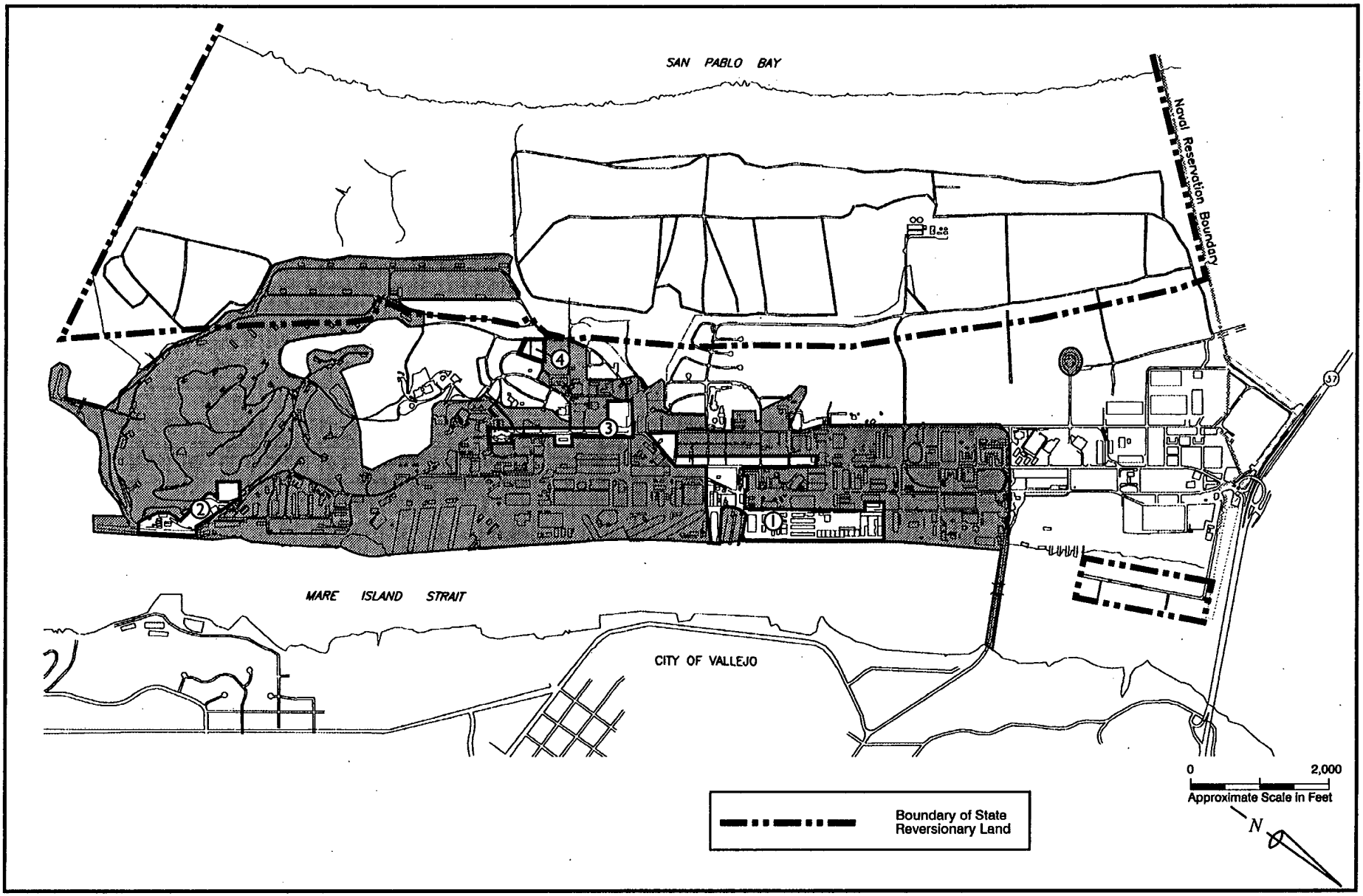
As a result of these studies, the historic properties at Mare Island have received 2 levels of designation. A small part of the island has been identified as a National Historic Landmark, with 4 discrete areas. A larger area has been listed in the NRHP as a historic district. The boundaries of the NRHP Historic District also include all parts of the NHL. The boundaries of the NHL and the NRHP Historic District are shown in Figure 3-9.

3.4.2 Prehistoric Resources

Resources in this category include sites, materials, and places associated with aboriginal, or Native Californian, inhabitants. "Prehistoric" refers to the cultural past before the advent of written records and, therefore, includes the archeological record of nonliterate cultures.

Ethnohistory

At the time of historic contact, Mare Island was occupied by the Patwin, descendants of the Miwok-Costanoans. They were surrounded on the west by the Coast Miwok, on the north by the Wappo, and on the south and east by the Miwok/Costanoan (often referred to as "Ohlone" in the greater Bay Area).



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The four districts of the National Historic Landmark are located within a larger National Register Historic District.

LEGEND:

- ① Shipyard/Residential District
- ② Naval Ammunition District
- ③ Hospital District
- ④ U.S. Marine Barracks District
- National Register Historic District

Source: JRP Historical Consulting Services, 1996; George Adams, 1975

Mare Island Historic Districts

Mare Island, California

Figure 3-9

The Patwin village called *Aguasto* was located on the eastern bank of the Mare Island Strait, north of the Mare Island Causeway (Johnson 1978). The term "Patwin" (the native word for people) was suggested by Powers (1877:218) for groups who spoke similar languages, but who distinguished themselves from the Wintuans, inhabitants of the northern half of the western Sacramento Valley. Patwin speakers are classified as belonging to the Penutian language family, along with the Wintuans, Miwok, Costanoan, Maidu, and Yokuts of California.

The earliest records concerning the Patwin are Spanish mission registers. Reports by Father Abella in 1811 and Luis Arguello in 1821 (Cook 1960) suggest the influence of the missions were confined mostly to the southern valleys and lowlands. It is known that at least 1,800 Indian neophytes were taken from Patwin settlements, such as *Aguasto,* by emissaries of Mission Dolores in San Francisco. Mission San Jose and Mission Dolores both actively converted Patwin from the southern villages (Bennyhoff 1961).

Missionization, the increase in the Euro-American population, and casualties from military and civilian raids significantly depleted the indigenous Patwin population. The most dramatic reduction resulted from malaria and smallpox epidemics in 1837. Cook (1955) estimated a 75 percent decrease in population due to these diseases. By 1924, Kroeber could find no Patwin surviving in the southern half of the region. The few that remained resided in or around 4 communities in Cortina and Colusa. By 1955, there were only 3 to 7 persons who were a quarter or more Patwin ancestry living in the Napa Valley (Kroeber & Heizer 1970). In 1972, the Bureau of Indian Affairs listed only 11 individuals claiming Patwin ancestry in the entire territory (Johnson 1978).

3.4.3 Prehistoric Archeological Sites

Four prehistoric sites have been recorded within the Mare Island project area. They are CA-SOL-17, -232, -233, and -387. In addition, a redeposited layer of shell midden, also on Federal surplus land, has been recorded with the designation P-48-000006. These sites, which are discussed in detail below and summarized in Table 3-12, have been evaluated and found not to meet the criteria for listing in the NRHP (SHPO 1994, 1996).

Recorded Prehistoric Sites

Site CA-SOL-17

As plotted by Pilling (1949), this site was located "On W side immediately behind Machine Shop #1. At water's edge N of SOL-233."

TABLE 3-12
RECORDED PREHISTORIC SITES ON MARE ISLAND

Trinomial	Primary #	Location	Description	Status
CA-SOL-17	None	West side of Mare Island by water's edge.	Shell mound	Location reevaluated. Recorded location appears to be incorrect.
CA-SOL-232	None	On the east side of Mare Island facing the strait.	Human skeletons, animal bones, and artifacts.	Destroyed
CA-SOL-233	None	West side of Mare Island, a half mile from the southern end.	Shell mound with charcoal and ashes.	Subjected to subsurface testing. No evidence of prehistoric cultural material recovered.
CA-SOL-387	P-48-000004	Terrace of the Mare Island Naval Cemetery.	Dark midden with pulverized shell. Material may have been imported.	Determined ineligible
None	P-48-000006	Beneath the road surface southeast of Mare Island Naval Cemetery.	Redeposited layer of dark sandy midden.	Determined ineligible

Source: William Self Associates 1995

Gerike and Terhorst (1987) prepared a supplemental site record for site CA-SOL-17, correcting the location of the site based on information from both Pilling's 1949 site record and Flynn and Roop's 1980 supplement to the record for nearby site CA-SOL-233. CA-SOL-17 had 3 prior, incorrectly plotted locations, none of which appeared reasonable to the 1987 researchers because the locations comprised either bay or marsh prior to land filling. The 1987 researchers plotted the site at an elevation of 10 to 15 feet, in keeping with Pilling's site record.

In May 1995 William Self Associates evaluated the historic description of the site and determined that the Flynn and Roop (1980) and Gerike and Terhorst (1987) locations for SOL-17 were incorrect. Machine Shop #1, used as a locational reference for the site in the original site record by Pilling (1949), was on the island's original northern shoreline, which is almost due north of SOL-233 but on the opposite side of the island. In addition, the geographical coordinates that have been added to the original site record have proven to be incorrect (Allan and Self 1996). SOL-17 was most likely in the vicinity of what is now Building 87. This location was not tested by William Self Associates, as it is paved over.

Site CA-SOL-232

Site CA-SOL-232, a shell mound first recorded by Nelson in 1907, contained human skeletons, animal bones, and stone tools (Brown and Maniery 1994). It was on the strait below the yards (on the magazine grounds), but, as noted subsequently by Nelson in 1911, it was destroyed by road ballast mining (Brown and Maniery 1994:15). Roop and Flynn (1986) located 5 discrete prehistoric cultural deposits (identified as prehistoric site 1) and, on the basis of auger tests, identified them as remnants of site CA-SOL-232. Brown and Maniery (1994) monitored several trenches for the saltwater fire suppression line in this location and did not observe the deposits described in Roop and Flynn (1986).

Site CA-SOL-233

Site CA-SOL-233, a shell heap originally recorded in 1907 by Nelson, was on the west side of Mare Island, about half a mile from the southern extremity on the first terrace, 40 to 50 feet above the water. The heap covered a linear area of 50 to 80 feet and contained shell, rock and earth, and ash and charcoal. Flynn and Roop (1980) prepared an updated record locating 2 additional sites and assigning field numbers of ARS 80-46-1 and ARS 80-46-2. Dark midden soil and shell were observed at both sites.

In May 1995, William Self Associates conducted subsurface testing of this site. Five test bores were drilled, each to a depth of 180 cm, in the recorded locations of SOL-233 and Roop and Flynn's ARS 80-46-1. All test bores were sterile, containing no evidence of cultural material (Allan and Self 1996).

Site CA-SOL-387

Site CA-SOL-387, recorded during recent construction monitoring (Brown & Maniery 1994), is on a terrace in the Naval Cemetery and consists of dark midden soil with pulverized shell. The archeologist noted that the midden material may have been imported as fill material and may not represent an intact cultural deposit. The SHPO concurred that this site is not eligible for nomination to the NRHP due to a lack of integrity (SHPO 1994).

P-48-000006 (no trinomial)

This deposit is beneath the road surface east and south of the Naval Cemetery. It consists of a redeposited layer of dark sandy midden with shell and broken red brick fragments. The midden also appears to have been deposited in the area as road fill and originally may have come from a prehistoric site elsewhere

on Mare Island. The SHPO also concurred that this site is not eligible for nomination to the NRHP due to lack of integrity (SHPO 1994).

Unrecorded Prehistoric Sites

Roop and Flynn (1986) identified 9 prehistoric sites within the project boundary. Three of these sites (CA-SOL-17, -232, -233) are described above. In May 1995, William Self Associates conducted subsurface testing of the remaining 7 sites, one of which, Prehistoric Site 7, was suggested as another possible location for SOL-17. SOL-233 (Roop and Flynn Prehistoric Site 3) and a third suggested location for SOL-17 (ARS 80-46-2 in Flynn and Roop 1980) also were tested. Roop and Flynn (1986) Prehistoric Site 1 was not tested because monitored trench areas in 1994 failed to detect cultural deposits. Tested sites are listed in the Table 3-13. Forty test bores were drilled at these 9 sites, each to a depth of 180 centimeters. Sediment samples from each test bore were screened through a quarter-inch mesh in 30-centimeter increments.

TABLE 3-13
PREHISTORIC SITES TESTED

Site Designation	Location	Description (Roop & Flynn 1986)	Test Results (Alan & Self 1996)
Prehistoric Site 2	Above SOL-232; surrounding buildings A43-44-45	Midden soil w/mussel shell	Determined not eligible
Prehistoric Site 3 (SOL-233; Flynn and Roop 1980; ARS-80-46-1)	On bluff between Buildings A150 & A151	Lens of dark shell-laden soil	Determined not eligible
Prehistoric Site 4	On bluff edge, behind Bldg. 986	Midden deposit	Determined not eligible
Prehistoric Site 5	Vicinity of Bldg. 866	Shell midden deposit	Determined not eligible
Prehistoric Site 6	Southern end of Alden Park	Midden soil	Determined not eligible
Prehistoric Site 7	Railroad Ave. between Alden Park and Bldgs. 46, 50, 52, 58, 116, and 54	Three patches midden soil w/mussel shell. Suggested location of SOL-17	Determined not eligible
Prehistoric Site 8	Hill between Quarters A, J, and K	Midden deposit w/ concentration of mussel shell	Determined not eligible
Prehistoric Site 9	N. of A Street, across from and in Mariner Park	Shell midden	Determined not eligible
SOL-17; (Flynn and Roop 1980; ARS 80-46-2)	North of SOL-233, east of A166	Darkened soil w/shell fragments	Determined not eligible

Source: Roop and Flynn (1986); Alan and Self (1996)

Natural deposits of chert, sandstone, and oyster shell were observed at every site. A single obsidian flake was recovered in a test bore drilled at Prehistoric Site 8. In addition, fragments of historic debris (glass, brick, tile, coal, and dust were recovered in bore holes at Prehistoric Sites 2, 4, 6, 7, and 9. As the obsidian flake was not found in association with any other cultural material, such as ash, charcoal, and fire-cracked rock, it is presumed to have been introduced to the site, possibly in historic fill material associated with 19th century construction activity. The historic debris is likewise assumed to be associated with such activity. No cultural material clearly indicative of a prehistoric presence was observed in any of the test bores (Allan and Self 1996b).

3.4.4 Historic Resources

Mare Island Naval Shipyard was found to be historically significant for events that occurred there over nearly a century, between the founding of the base in 1854 and the end of World War II in 1945. The following information is condensed from JRP Historical Consulting Services, "Historic Context" for Mare Island Naval Shipyard (1995), discussing the significance of events at Mare Island in various periods.

1854-1865: Founding of the Navy Base through the Civil War

During these years, Mare Island was important as the only Navy base on the West Coast and as the principal naval facility for maintaining the Pacific Squadron and for defending San Francisco Bay from an anticipated attack by Confederate forces. The base was laid out during these early years and the basic form of the old shipyard was established. The design of the facility was prepared by William P. Sanger and approved by Commander David Glasgow Farragut, the station's first commandant. The plan initially was executed by Daniel Turner, who was the first civil engineer at Mare Island. In addition, the Ammunition Depot was established during these years, and the first magazines built of sandstone and brick. More than a dozen buildings and structures remain from this early period, representing a remarkable collection of mid-19th century industrial and military historic resources.

1866-1897: Civil War to the Spanish-American War

Immediately after the Civil War, the US Navy generally went into a period of decline, with most of its ships being scrapped or sold. Mare Island fared better than most facilities, however, because of its preeminence among West Coast yards. During the late 19th century, the Navy authorized construction of Dry Dock #1, which still exists as one of the oldest dry docks in the United States and is remarkable for its stone masonry structure. It was during this period that Mare Island was transformed into a multiple-mission facility, with the

construction of a hospital, Marine barracks, dozens of family housing units, and a major expansion of the shipyard and ammunition depot.

1898-1918: Spanish-American War through World War I

The period between the Spanish American war and the end of World War I was one of tremendous expansion for Mare Island, and many of the most interesting and important historical resources at Mare Island date to this period. Coincidental with the beginning of the Spanish American War, Mare Island in 1898 was hit with a major earthquake, destroying many post-Civil War era buildings, particularly the hospital and residential units. Because of the earthquake and greatly accelerated shipyard activities, hundreds of buildings were constructed at Mare Island during this period, and many of these still remain. The existing hospital, Marine Barracks, Officers Row housing, and dozens of shipyard buildings were built during this period.

1919-1938: The Interwar Years

Relatively few buildings were constructed on Mare Island during this time because this was a period of reduced military spending. The key development during this era was the gradual transformation of the shipyard from a general ship repair facility to one specializing in repair and construction of smaller crafts, including submarines. Mare Island had become the major West Coast submarine repair facility during World War I, and the submarine base continued to expand after the war. During this period, the area of the island was increased tremendously by reclaiming marsh lands with dredge material and fill generated by removing "Dublin Hill," a promontory near the headquarters building that was leveled during the 1930s.

1939-1945: World War II

World War II was Mare Island's finest hour in terms of its contribution to the national defense. Mare Island had grown in response to earlier wars—the Civil War, Spanish American War, and World War I—but had not participated directly in the war effort. During World War II, the base played a key role in the war in the Pacific, serving in 3 major capacities—in the repair of battle-damaged ships, in the construction of smaller craft, and in the construction and repair of submarines. During the war, employment at Mare Island soared to more than 40,000. To accommodate workers and the accelerated work load, hundreds of temporary buildings with a life span of 5 to 7 years were built. Some of these facilities still remain. These range from the huge ship repair buildings, some with several hundred thousand square feet of space, to more human-scale buildings, such as WAVE barracks and officers housing, and warehouses and toolsheds. World War II resources account for nearly half of the remaining historic buildings at Mare Island.

1946-Present

For Mare Island, the post-war era was largely a period of retrenchment. Many facilities, such as the hospital and prison, closed altogether, and others, such as the Marines detachment, were scaled back. The shipbuilding function, the heart of Mare Island's operation, essentially disappeared. Other functions increased, including the repair for nuclear submarines and key training functions. Mare Island did retain an important role in developing various specialized submarines and in repairing small vessels. This early Cold War submarine work, Mare Island's reputation as the West Coast's submarine shipyard, and a growing emphasis on the use of submarines by the Navy appear responsible for Mare Island's evolution during the Cold War into a nearly exclusive submarine shipyard.

3.4.5 Historic Archeological Sites

Mare Island has been identified as a single historic archeological site composed of numerous features. Only features that contribute to the overall historic significance of the archeological site were noted. The value of a feature varies based on the availability of historical records, knowledge regarding a specific period, and the data potential contained in deposits that could address ongoing research questions and domains. Generally, archeological features have the potential to provide important information regarding Mare Island's social, economic, and physical history. Data retrieved from intact features also may be useful in addressing ongoing research topics in military history, frontier adaptation, self-sufficiency, and trade, especially during the early formative years of the base when supply and demand in California was erratic due to lack of transportation, the Gold Rush, and industrial technology.

During a prior cultural resources survey of Mare Island, 55 areas were recognized as having the potential for historical archeological resources, based on archival research (Roop and Flynn 1986). Identified areas were located on a map but were not recorded because most are not visible beneath existing pavement and buildings. Brown and Maniery recorded 3 historical sites on Mare Island during a 1994 reconnaissance survey. These are designated as CA-SOL-385H, -386H, and -388H. Two additional archeological features were recorded by PAR in 1995 as part of the National Register evaluation of Mare Island. These latter 2 records are sites CA-SOL-394H and CA-SOL-395H. Currently, 28 historical archeological features are recognized at Mare Island as contributing elements to the Mare Island National Register of Historic Places district. These features are described below. Table 3-14 summarizes these data and provides a concordance of Roop and Flynn historic sites with the most recent work.

TABLE 3-14
HISTORIC ARCHEOLOGICAL SITES ON MARE ISLAND

Trinomial	Primary No.	Location	Description/Time Period	Status
CA-SOL-385H Maniery and Baker (1995) Historic Feature 10	P-48-000001	Southeastern tip of Mare Island	Western portion of the Civil War defensive earthwork, constructed in 1864 (Roop and Flynn [1986] Historic Site 12)	Contributing element of NRHP District-Ammunition Depot
None	P-48-000002	Beneath roadway east of Mare Island Naval Cemetery	Redwood plank drain pipe, common in the Mare Island area	Determined ineligible
CA-SOL-386H Maniery and Baker (1995) Historic Feature 7	P-48-000003	Southeast tip of Mare Island	Dark gray sandstone seawall constructed in the 1850s to 1860s	Determined eligible as element of Ammunition Depot
CA-SOL-388H Maniery and Baker (1995) Historic Feature 8	P-48-000005	East side of Mare Island by the southern tip	Low brick retaining wall 1,089.5 feet long; first section constructed in 1857	Determined eligible as element of Ammunition Depot
CA-SOL-394H Maniery and Baker (1995) Historic Feature 16	Not formally recorded	South end of island	Ordnance Reservoir, 1873; remodeled in 1897	Contributing element of NRHP District-Ammunition Depot
CA-SOL-395H Maniery and Baker (1995) Historic Feature 28	Not formally recorded	South end of island	Bay model built in 1923; designed in 1919	Contributing element of NRHP District-Ammunition Depot
Maniery and Baker (1995) Historic Feature 1	Not formally recorded	Industrial Area Vicinity of Buildings 87, 98, and 507	Includes 1854 steam engineering complex, original stable area, gun park, cisterns (Roop and Flynn [1986] Historic Sites 18, 19, 22, and 49)	Contributing element of NRHP District-Shipyard North area
Maniery and Baker (1995) Historic Feature 2	Not formally recorded	Vicinity of Building 607	First Independence Berth/Quay wall, 1857-1883	Contributing element of NRHP District-Shipyard North area

TABLE 3-14
HISTORIC ARCHEOLOGICAL SITES
ON MARE ISLAND (cont'd)

Trinomial	Primary No.	Location	Description/Time Period	Status
Maniery and Baker (1995) Historic Feature 3	Not formally recorded	Vicinity of Dry Dock 2 and Building 125	Marine Railway and Wet Basin, 1856 (Roop and Flynn [1986] Historic Site 7)	Contributing element of NRHP District-Shipyard North area
Maniery and Baker (1995) Historic Feature 4	Not formally recorded	Vicinity of Building 115	Sawmill, 1861-1898 (destroyed in 1898 earthquake) (Roop and Flynn [1986] Historic Sites 9, 20)	Contributing element of NRHP District-Shipyard North area
Maniery and Baker (1995) Historic Feature 5	Not formally recorded	Vicinity of Building 88	Stable Complex, 1862 (Roop and Flynn [1986] Historic Site 35)	Contributing element of NRHP District-Shipyard South area
Maniery and Baker (1995) Historic Feature 6	Not formally recorded	Vicinity of Building A1	NAD Wharf, 1864-1941	Contributing element of NRHP District-Ammunition Depot
Maniery and Baker (1995) Historic Feature 9	Not formally recorded	Vicinity of Building A45	NAD Keeper's House, 1860 (Roop and Flynn [1986] Historic Site 11)	Contributing element of NRHP District-Ammunition Depot
Maniery and Baker (1995) Historic Feature 11	Not formally recorded	Officers Housing Area	Officer's Housing, 1858-1898; area now occupied by officer's housing (Roop and Flynn [1986] Historic Sites 23-34)	Contributing element of NRHP District-Residential/Administrative
Maniery and Baker (1995) Historic Feature 12	Not formally recorded	Vicinity of Dry Docks 3 and 4	Second Independence Berth, 1883-1914 (Roop and Flynn [1986] Historic Site 51)	Contributing element of NRHP District-Shipyard South
Maniery and Baker (1995) Historic Feature 13	Not formally recorded	Vicinity of 15th Street	Hospital pier/wharf, 1869-1906	Contributing element of NRHP District-Shipyard South

TABLE 3-14
HISTORIC ARCHEOLOGICAL SITES
ON MARE ISLAND (cont'd)

Trinomial	Primary No.	Location	Description/Time Period	Status
Maniery and Baker (1995) Historic Feature 14	Not formally recorded	Vicinity of Building A43	NAD Watchman's House, 1874 (Roop and Flynn [1986] Historic Site 16)	Contributing element of NRHP District-Ammunition Depot
Maniery and Baker (1995) Historic Feature 15	Not formally recorded	Southern tip of island	Lighthouse Reservation (Roop and Flynn [1986] Historic Site 39)	Contributing element of NRHP District-Ammunition Depot
Maniery and Baker (1995) Historic Feature 17	Not formally recorded	Golf course	Yard reservoir/tunnel, 1874.; now called Lake Roberts	Contributing element of NRHP District-Ammunition Depot
Maniery and Baker (1995) Historic Feature 18	Not formally recorded	Civilian Housing Area, west of Walnut Avenue	Civilian housing, 1870s, called "Dublin Hill" (Roop and Flynn [1986] Historic Sites 41-48)	Contributing element of NRHP District-Residential Administrative
Maniery and Baker (1995) Historic Feature 19	Not formally recorded	West of hospital	Medical Officers Housing/hospital stable complex, 1870s-1940s (Roop and Flynn [1986] Historic Site 38)	Contributing element of NRHP District-Hospital
Maniery and Baker (1995) Historic Feature 20	Not formally recorded	Northeast and southeast of Building 866	Marine Corps Officers housing/outbuildings, 1874-1940s	Contributing element of NRHP District-Marines Area
Maniery and Baker (1995) Historic Feature 21	Not formally recorded	West of Building 866	Marine Enlisted Men's barracks/latrines, 1874-1900 (Roop and Flynn [1986] Historic Site 37)	Contributing element of NRHP District-Marines Area
Maniery and Baker (1995) Historic Feature 22	Not formally recorded	Now under Farragut Village	Marine Corps area seawall, 1866-1898	Contributing element of NRHP District-Marines Area

TABLE 3-14
HISTORIC ARCHEOLOGICAL SITES
ON MARE ISLAND (cont'd)

Trinomial	Primary No.	Location	Description/Time Period	Status
Maniery and Baker (1995) Historic Feature 23	Not formally recorded	Vicinity of California Avenue by Building 680	Independence crew quarters, 1899 (Roop and Flynn [1986] Historic Site 37)	Contributing element of NRHP District-Shipyard South
Maniery and Baker (1995) Historic Feature 24	Not formally recorded	Vicinity of Berths 18-19	Hospital wharf, 1900	Contributing element of NRHP District-Shipyard South
Maniery and Baker (1995) Historic Feature 25	Not formally recorded	Vicinity of Building A223	Torpedo boat wharf, 1904 (Roop and Flynn [1986] Historic Site 17)	Contributing element of NRHP District-Ammunition Depot
Maniery and Baker (1995) Historic Feature 26	Not formally recorded	East lawn of hospital	Bandstand	Contributing element of NRHP District-Hospital
Maniery and Baker (1995) Historic Feature 27	Not formally recorded	Vicinity of Buildings 387 and 689	Submarine repair base, 1914 (Roop and Flynn [1986] Historic Site 54)	Contributing element of NRHP District-North End

Sources: Flynn and Roop 1986; Maniery and Baker 1995

Recorded Historic Sites

Site CA-SOL-385H

Recorded in 1994 (Brown and Maniery 1994), this historic site, identified as "Old Magazine for Fort" on an 1896 map, consists of the remains of the western portion of the Civil War defensive earthworks and a portion of a brick magazine. It was constructed in 1864 and is on the southeastern tip of Mare Island on a bluff overlooking the Mare Island Strait and San Pablo Bay. It is assumed that more of the structure remains beneath the mounded earth.

Three Civil War defense fortifications were built at Mare Island in the 1860s. The 2 on Dublin Hill were destroyed in later years. The crescent-shaped earthworks at the south end of the island are partially intact. These earthworks were unique for the Navy in that they were designed with assistance from the Army Corps of Engineers in a typical Army design, similar to that used at Fort Point (Barker 1995). In addition, the defense system represents the only surviving Civil War earthworks at a Navy yard in the west.

Site CA-SOL-386H

Located on the southeastern tip of Mare Island near the Coast Guard site, this site consists of a segment of dark gray sandstone seawall measuring 91 feet long (Brown and Maniery 1994). The wall runs northwest to southeast at the base of a natural bluff and was constructed in the 1850s and 1860s to retain the shoreline of the magazine area. The site has been determined to be eligible for listing on the NRHP (SHPO 1994). The seawall was discovered while trenching for replacement of a pipeline and has since been reburied.

Site CA-SOL-388H

This site consists of a low brick retaining wall (Brown and Maniery 1994). Some sections are original, and others have been replaced. It ranges from 14 to 65 inches high and is 1,089.5 feet long. It was installed to help control erosion around the ammunition depot and was probably built in several stages, the earliest in 1857. It is on the east side of Mare Island by the southern tip, behind Building A-15. The site also has been determined to be eligible for listing on the NRHP (SHPO 1994).

Site CA-SOL-394H

This site, the ordnance reservoir, was designed by Chief Engineer Calvin Brown and built in 1873. It provided water for fire suppression at the NAD and had an earthen dam with a brick gauging station and spillway. The feature was extensively remodeled in 1897 under the direction of Mr. Vogel, who

constructed a brick spillway and brick-faced dam. Today the feature consists of a water reservoir, including a dam, spillway, and gauging station with a gangway. The reservoir sits in a large swale in the hills at the south end of the island, surrounded by grasslands, live oaks, eucalyptus, and acacia trees. It is important for its engineering design and construction methods.

Site CA-SOL-395H

This site, the Bay Model, was designed by Captain Leonard Cox in 1919 as part of a proposal illustrating the feasibility of maintaining a major shipyard at Mare Island after World War I. The proposal was in response to the Helm Committee selection of another site for Bay Area shipbuilding activities. The resource consists of a concrete model on a knoll overlooking San Pablo Bay. The model played a unique role in the history of Mare Island and also is a contributing element to the NAD area for its engineering design and layout.

Isolate P-48-000002

Recorded by Brown and Maniery in 1994, this isolate consists of a redwood plank drain pipe beneath the roadway east of the Naval Cemetery. Similar drainage systems have been discovered during construction activities on Mare Island. This site has been deemed ineligible for listing on the NRHP (Brown and Maniery 1994).

Unrecorded Historic Features

Feature 1 encompasses Mare Island's original steam engineering complex, including the foundry, machine shop, boiler, coal sheds, cisterns, and associated industrial refuse and latrines. Immediately behind the foundry were Mare Island's first stables (1854-1862), presently under Buildings 98 and 107, and the original location of the ordnance storage area and gunpark. Deposits from the industrial area, including water cisterns, could be used to address topics of industrial technology and cultural geography. Features from early shipbuilding and foundry activities would be of particular importance for their comparative value.

Feature 2 represents the first berth of the United States Ship (USS) Independence. The USS Independence arrived at Mare Island around 1857 and was permanently berthed next to the stone quay wall by the foundry. This ship carried medics operating the yard dispensary, prisoners, and Marines (Lemmon and Wichels 1977:3). Refuse disposed over the side of the ship or off the edge of the berth could provide data useful in reconstructing the function of the ship and daily activities of the men who lived on the vessel. The shoreline has expanded slightly east in this area and refuse from the USS

Independence, along with her berth on the quay wall, may be preserved under fill.

Feature 3, the marine railway and wet basin, is associated with early shipbuilding activities. In 1986 construction uncovered granite blocks associated with the 1856 marine railway and wet basin originally located in the vicinity of Dry Dock 2 and Building 125. These blocks, or "rails," were about 3 feet thick by 4 feet wide and varied in length from 3 to 12 feet. The granite rails rested on redwood pilings, also identified during construction (Roop and Flynn 1986:219). The marine railway and engine house, although partially obliterated, is important as an example of shipyard operations and as the first marine railway built at a naval yard in the west.

Feature 4 represents the Mare Island sawmill, built in 1861. This brick building had a cellar and was 2 stories high, with a brick wing extending from the side of the sawmill. The mill provided wood for the nearby joiners and boatbuilders. The sawmill was destroyed in the 1898 earthquake (Roop and Flynn 1986); its site is underneath Buildings 106 and 113.

Feature 5 is the second location of the stables. In 1862 a new location for stables was chosen in Shipyard South. Today, only Building 88 remains of the original complex. Other outbuildings (blacksmith area, shed, stablekeeper's residence) have been removed. A comparison of refuse from this area and from the original stable complex in the Shipyard North area could provide data relevant to industrial technological studies, as well as cultural geography issues. Blacksmithing efforts and domestic refuse associated with this complex also could provide important information to fill in gaps in this early period's history.

Feature 6, the Naval Ammunition Depot (NAD) Wharf, was built in 1864 and stretched into the water from the centerpoint of the depot. The wharf provided the main access to the ammunition area. It remained in service until World War II, when it was removed during the war effort. While most of the wharf remains have disappeared through intensive dredging activities, the base of the wharf is likely preserved under fill and could contribute to understanding early construction and functional layout and design. The wharf also may be important for its association with the early development of the NAD area.

Features 7 and 8 are described above with recorded historical resources.

Feature 9 is the Ammunition Depot Keeper's House. It is probable that refuse deposits are associated with the watchman's or keeper's house (Building A45). This house was established in 1860 to provide shelter for the magazine chief gunner. It still is in use today, although it has been altered. According to

historical maps of the area, the house once had an associated garden, outbuildings (including latrine), and other features. Deposits associated with the domestic feature of the keeper's house could yield information regarding the social organization, economic status, and possible ethnic affiliation of this civilian residence. These deposits, when compared to similar deposits from officers or civilian housing, could shed light on social and economic lifeways on base.

Feature 10 the Civil War Battery, is described above with recorded resources.

Feature 11 is the residential area set aside for officers and was developed beginning in 1858. Work orders indicate that these early brick structures had basements, outhouses, livestock holding pens or stables, sheds, or gardens. The earthquake in 1898 and its aftershocks destroyed the 14 officers houses. Archeological features associated with the housing between 1858 and 1898 could include discrete trash deposits, refuse pits associated with cleanup activities, sheet refuse, filled cisterns, wells, and basements and foundation remains. Deposits from this domestic occupation area would be extremely important in examining dietary habits of officers households, social and economic lifeways of families stationed on base, functional layout, and landscaping.

Feature 12 is the site of the second Independence berth. In 1883 a new berth for the receiving ship USS Independence was constructed north of the hospital wharf. The USS Independence was moved into the Shipyard South area from the north to make room for coal sheds. It was reached by a long pier that extended east from the end of today's 13th Avenue into the straits. The USS Independence remained at this berth until 1914 when it was towed away and destroyed (Lemmon and Wichels 1977:3). Early records note that in summer, the ship essentially was grounded on mud flats (US Navy 1908-1911; 1911:146). These conditions, combined with the fill that capped the site after she was sold, would have preserved refuse and other deposits from the Independence and could contribute to the overall knowledge of daily life aboard the receiving ship. Remnants of the pier could contribute to reconstructions of pier and berth construction methods and cultural geography studies of the base.

Feature 13 is associated with the base hospital. When the new hospital was built in 1870 a long roadway led from the front of the hospital to the Mare Island Straits along the general route of 13th Avenue. This road was constructed across the tule fields on piers and ended at a wharf. The modest wharf, built in 1869, served the hospital and the stables (Building 88) until 1906. Filling of the tule lands probably preserved the remains of the hospital pier and wharf, and archeological deposits are predicted. This pier was used for many years to unload and load supplies, and equipment for use at the

hospital. It also was used to transport patients to the hospital. It was the first hospital pier built for the Navy in the west, and it is likely buried under fill.

Feature 14 consists of the remains of the 1874 Ammunition Depot watchman's house, near Building A43. This house once had an associated latrine, sheds, chicken house, garden, and other ancillary structures. Artifactual deposits from this house are likely to be present around the remain of the house, as are structural foundations and other architectural features. Deposits associated with this residence could be used to address questions regarding consumer behavior, social and economic status and economic lifeways, ethnicity, and cultural geography.

Feature 15, the Lighthouse Reservation, is on a bluff on the south side of the island. Established in 1871, from 1883 to 1916 it was operated by Kate McDougal but remained primarily vacant after her death. Although the lighthouse was demolished and its site excavated and removed after 1930, the back area of the reservation was not impacted. Foundation remains from the original water tank, surface artifact scatters, and remnants of sheds are visible today. Subsurface deposits associated with refuse disposal and domestic occupation at the lighthouse reservation also are predicted in the backyard area. Refuse deposits from this feature could contribute to themes of consumer behavior, social and economic lifeways, cultural geography, and ethnicity/gender.

Feature 16, the ordnance pond, is discussed above with recorded historical resources as site CA-SOL-394H.

Feature 17, the Yard Reservoir, was part of a larger water system that included Feature 16. The yard reservoir was constructed in 1876 and was notable because of the granite block lining and granite dam. It also had a large earthen berm at the west end. Water was discharged into iron pipes through a bricked tunnel that led east from the reservoir. The reservoir and tunnel associated with the yard reservoir is likely present underground, is a significant element of Mare Island's early water system, and contributes to understanding base layout and design.

Feature 18 also is known as Dublin Hill. Perhaps the most important development during this time was the expansion of the civilian employees' community around Dublin Hill. The community began to build up by 1874 and continued until the 1940s. While the area of historical Dublin Hill east of Walnut Avenue has been removed and used as fill, destroying any potential archeological resources, the western portion of the civilian housing area, west of Walnut Avenue near Building 535, has remained relatively undisturbed under fill. Potential archeological deposits could include filled cellars, privies, cisterns, basements, surface sheet scatter of artifacts, or discrete trash deposits.

Associated deposits could shed light on cultural diet preferences, social and economic lifeways, ethnicity, gender, and cultural geography.

Feature 19 represents the medical residential complex and associated hospital stables. Development of the hospital in the 1870s led to a need for medical staff housing and equipment. In 1891 a house was constructed north and west of the hospital for the medical director's use. This house was surrounded by a vast lawn, concrete walkways, rock work, and other landscaping and remained in use until the 1960s when it was dismantled. Today, there is a park at this site, although the sidewalks, concrete stairs that led to the front entrance, and other landscaping features remain. Potential archeological features at this location include foundation remains and possible sheet refuse or discrete refuse deposit areas.

Located east of the medical officer's house on the east side of Cedar Avenue, was the stable complex that served the hospital. Built in 1874, this area near Seely Circle once contained a barn, corral, and carriage house. It was situated just south of the main naval yard stable complex and may have been operated in conjunction with Building 88. Deposits associated with the medical officer's quarters, hospital stables, cistern, and outbuildings could contribute to domestic occupation reconstruction, industrial technology, and cultural geography.

Features 20 and 21 are related to the Marine Corps unit stationed at Mare Island. The Marine Corps Commander's residence and 3 officer's quarters, Feature 20, flanked the north and south sides of the parade ground in front of the enlisted men's barracks, Feature 21. Sheds, latrines, livestock areas, and gardens were incorporated into the landscape. These features were built during the 1870s and were used into the 1890s. Refuse from the enlisted men's barracks and mess hall and officers quarters would contribute to an understanding of daily activity, dietary differences between prisoners, enlisted men, and officers, and social and economic status.

Feature 22, a seawall, protected the Marine Corps area. In conjunction with the Marine Corps area development came the need to control the bay to the west. Construction started in 1866 on a granite seawall that spanned the mouth of a U-shaped cove west of the barracks, potentially on state reversionary land. This wall held back the sea until around 1898, when filling began in this area. The seawall constructed in the Marine Corps area is likely to be intact under fill and would serve as an example of construction methods and engineering design from this period of growth and development on base.

Feature 23 is the housing area used by the USS Independence crew. The drill hall, latrine, and bathhouse used by the USS Independence crew were built in 1899 in the general vicinity of Building 630. Remnants of these outbuildings

and the base of the USS Independence wharf are predicted under fill and under the building at this vicinity. Expected features include trash deposits, foundation remains, wood piers, and structural remnants. Deposits from the new crew quarters next to the USS Independence berth could provide important comparative data regarding consumer behavior, social and economic status, and cultural geography.

Feature 24, the hospital wharf, was greatly expanded after 1900. Several buildings were constructed at this wharf and are associated with World War I activities. Remnants of the wharf, discarded tools, and refuse could be present under fill in this area. Deposits preserved in the bottom mud and in fill could provide information on wharf construction techniques.

Feature 25 is another wharf located in the Ammunitions Depot. A major facility labeled a Torpedo Boat Wharf was built in 1904 and was situated between buildings A224 and A225, extending into the strait. Two perpendicular docks, each containing a building, extended south from the wharf. This facility played an important role in ammunition transport during World War I but was removed by 1929. Remnants of this wharf may be present under fill in the NAD area. Deposits from the wharf could contribute to studies of technological advances in wharf construction, ordnance use, and shipbuilding activities.

Feature 26 is associated with Mare Island's recreational use. A bandstand and pavilion were located in front of the hospital and provided a greeting place for dignitaries and entertainment for patients. These locations are marked by circular raised concrete platforms, steps, and portions of walkways. While the sides and roof of the bandstand and hospital pavilion have been removed, the structural remains evoke a sense of time and place on the hospital grounds.

Feature 27 is the base submarine repair facility and wharf. Perhaps the most significant feature in the north end dating to this period is the submarine repair dock and associated facilities. The area, generally between B and E streets and Waterfront and California Avenues, may contain deposits and structural remains associated with the submarine repair and building station. Mare Island played an important role in the Navy's development of submarines and was a leader in submarine repair and construction. Deposits and features associated with this facet of the shipyard are important for the association with submarine development and for chronicling industrial technology and cultural geography in this functional activity area.

Feature 28, the Bay model, is discussed above with recorded historical resources as site CA-SOL-395H.

3.4.6 Architectural Resources

Mare Island is rich in historic architectural resources, reflecting naval use of the facility for more than a century. In 1975, a small part of the historic building stock (952 buildings) was designated a National Historic Landmark. Historic buildings were reevaluated in 1986 by Kenneth Cardwell and again in 1996 by JRP Historical Consulting Services. The 1975 and 1986 studies delineated 4 distinct historic districts, while the 1996 study expanded the boundaries of the districts to create 1 larger historic district (Figure 3-9). The 1996 Mare Island Historic District defines a historic area that reflects use of the island by the US Navy between its founding in 1854 and the end of World War II in 1945. The expanded historic district (JRP 1996) encompasses primarily surplus land but also includes the sites to be transferred to the Coast Guard, US Army, USFS, and USFWS. The southwest edge of the revised historic district is on state reversionary land.

The Mare Island Historic District encompasses approximately 65 percent of Mare Island Naval Shipyard. The historic district includes an area of about 980 acres, of a total usable area of approximately 1,500 acres at the shipyard. The boundaries for the historic district encompass the vast majority of buildings, structures, and sites that potentially contribute to the areas of significance (military history, industrial history, architecture and engineering, and historic archeology) and to the period of significance (1854-1945). Excluded from the boundaries of the district are those areas of the base that are dominated by post-1945 construction, an exclusion made necessary by the need to maintain an acceptable ratio of contributing to total buildings, structures, and sites.

The Mare Island Historic District includes a rich collection of buildings, structures, and sites that represent nearly a century of naval activities at this, the oldest shipyard and naval facility on the West Coast of the United States. The core of Mare Island has always been the shipyard, the raison d'etre of the facility, and it is within the shipyard that the most precious and impressive aspects of the district may be seen—the oldest buildings on the base and some of the oldest shipyard buildings anywhere in the United States, as well as the huge shop buildings from the 20th century, some of which are larger than 300,000 square feet. The naval base, however, has always been more than a shipyard, and the historic district is dotted with buildings, structures, and sites that reflect the presence of a naval community, as comparable to a municipality as to a military base. Included therein are properties associated with a wide range of military missions, including a large ammunition depot, a major naval hospital, a Marine barracks and, during the 20th century, a submarine base. Also reflective of the diverse military missions are dozens of buildings and structures that supported the base as a whole or individual missions—warehouses, public works facilities, and so forth. Included are the accouterments of a community of full-time residents. These include pockets of

residences, ranging from mansions for ranking officers to bungalows for junior grade officers and cottages for civilian employees. These also include recreational and support facilities for enlisted personnel, officers, and civilians. Finally, the historic district includes dozens of ancillary buildings that, while individually unimpressive, add to the diversity and richness of the sense of time and place within the district. The smaller buildings date from the 19th and the 20th centuries and include such functions as garages, power substations, small ammunition magazines, and, from the World War II era, bomb shelters and first aid stations.

In addition to a range of buildings and structures, the historic district includes historic archeological features that document the earliest American military occupation of the island, the industrial technology associated with shipyard activities, and cultural geography and layout. The historic district also includes several impressive landscape architectural features—parks, allees, and so forth. Landscape architecture is a less important element at Mare Island than in some historic military facilities because it was from the outset an industrial facility, dominated by shipworks that allowed for little landscaping. In some areas of the base, however, very old plantings and landscape schemes may be seen and appreciated.

The dominant characteristic of the historic district is its diversity. This relates to the long period of significance, 91 years from the era of wooden sailing ships to the eve of the nuclear era, from the early American occupation of California through World War II. It reflects as well the presence of discrete functional units at the base. It also relates to the presence of hundreds, sometimes thousands, of permanent residents at the base and the need for community-based facilities in addition to mission-related facilities. This functional diversity is expressed in a range of building and structural types, including a variety of structural systems and architectural styles. There is not a simple thematic unity to the properties at Mare Island, as would be the case with a base that was built as a single unit at a single time. Because the district is so varied, the resources included therein can only be appreciated in the context in which they were built. That context is defined by 2 variables—the function with which a resource is associated (the hospital, for example, or the ammunition depot) and the period in which the resource was built. For this reason, significance is described and discussed in terms of 5 historical periods and 7 areas of the base, which correspond to discrete missions for the base (3.1.4).

The 1996 historic district boundary includes 661 buildings and structures, 502 of which are contributing elements. It also includes 12 historic landscape areas, all of which contribute to the historic significance of the district. Finally, it includes 1 historical archeological site, comprised of a minimum of 28 discrete features, all of which contribute to the significance of the district. The Mare

Island Historic District includes all elements of the NHL, including the 49 buildings and structures included as NHL properties.

3.4.7 Historic Preservation Requirements

Following is a summary of the primary historic preservation laws and regulations governing treatment of historic resources on Federal properties.

Federal Laws

Section 106 of the National Historic Preservation Act (NHPA), 16 U.S.C. § 470f, as amended (Pub. L. 89-515), and its implementing regulations (36 C.F.R. 800) require Federal agencies to consider the effects of their actions on properties listed, or eligible for listing, in the NRHP. It also requires that agencies provide the Advisory Council on Historic Preservation (ACHP) an opportunity to comment on actions that will directly or indirectly affect properties included in or eligible for inclusion in the NRHP. The criteria for evaluating NRHP eligibility, or significance, of historical properties are found in 36 C.F.R. 60.4.

Additional responsibilities are placed on the activity commander or commanding officer pursuant to cultural resources requirements of the DOD and the Department of the Navy (DOD Directive 4710.1 of 21 June 1984, Archeological and Historic Resources Management; Department of the Navy OPNAVINST 5090.1B, Historic and Archeological Resources Protection, 1 November 1994, Chapter 23). More specifically is Section 110 (a) (2) of NHPA, which requires that the Navy establish a program to locate, inventory, and evaluate all historic properties under its jurisdiction that may qualify for listing in the NRHP and to nominate such properties.

Another applicable Federal law is the Archeological Resources Protection Act (ARPA), 16 U.S.C. §470aa-11. This law requires issuance of permits to excavate any archeological resources on Indian tribal or Federal lands. Unauthorized activities are punishable by fine, imprisonment, or both.

Another applicable Federal law is the Native American Graves Protection and Repatriation Act (NAGPRA), 25 U.S.C. §3001 *et seq.* NAGPRA requires Federal agencies and museums receiving Federal funds to inventory and repatriate human remains, associated and unassociated funery objects, and items of cultural patrimony to Native Americans. These items must be returned, upon request, to lineal descendants or to Indian tribes with the closest cultural affiliation.

State Laws

The principal state law relating to preserving historical and archeological properties is that of Appendices G and K of CEQA, Cal. Pub. Res. Code 21000 *et seq.* CEQA mandates that significant effects to cultural resources be determined during the project planning stage. Under this law, cultural resources include both prehistoric or historic archeological sites, as well as paleontological resources or properties of historic, cultural, or architectural significance to a community, ethnic group, or social group.

In addition to CEQA, the California Register Act of 1992, codified in Section 5020 and Section 21083 and 21084 of the Public Resources Code (PRC) offers specific guidance for the protection of archeological resources. The California Register of Historical Resources is a listing of significant historical resources in the state, similar to the NRHP at the national level. NRHP-listed or eligible properties are automatically listed in the California Register; therefore, the Mare Island Historic District is included within the California Register. PRC 21084 provides instructions on the treatment under CEQA of projects that may result in a "substantial adverse change" to historic properties. Generally, a project that will have a "substantial adverse change" on a California Register property is regarded as having the potential for a significant effect on the environment.

In addition to the requirements of the California Register Act, special protection is provided under state law for historic properties that are owned by the State of California. Executive Order W-26-92, issued in April 1992, mandates that state agencies maintain and preserve, when prudent and feasible, historic properties under their jurisdiction. No state agency may destroy a historic resource under its jurisdiction without first seeking the advice and comments of the SHPO. To the extent that any historic properties at Mare island revert to state ownership, the administering agency will be subject to the provisions of Executive Order W-26-92 and applicable state laws, including the California Register Act.

3.5 AESTHETICS AND SCENIC RESOURCES

This section describes the visual resources at Mare Island that would be viewed from the immediate and more distant areas. View points with high viewer sensitivity are identified. In combination, natural and manufactured features make up the distinguishable character of the overall landscape. The ROI for these visual resources includes areas of the Mare Island viewshed within 5 miles of Mare Island.

Methodology

A modified Bureau of Land Management (BLM) visual resource management program (US Bureau of Land Management 1980) methodology has been used to identify scenic quality classes applicable to Mare Island. This system uses 7 factors to determine scenic quality—landform, vegetation, water, color, influence of adjacent scenery, scarcity, and human modification. Each scenic resource area on Mare Island has been evaluated and assigned a scenic quality rating from the 4 categories listed below. In general, areas that have been preserved as open space or that contain historic sites or structures are assigned higher scenic quality ratings than areas in which extensive development has occurred.

- Class A. Areas that combine outstanding visually interesting and/or aesthetic features.
- Class B. Areas in which there is a combination of some outstanding visual features and some that are fairly common to the region.
- Class C. Areas in which the visual features are fairly common to the region.
- Class D. Areas in which there has been extensive disturbance or development, without mitigating or interesting visual features, resulting in negative scenic qualities.

3.5.1 Existing Visual Resources

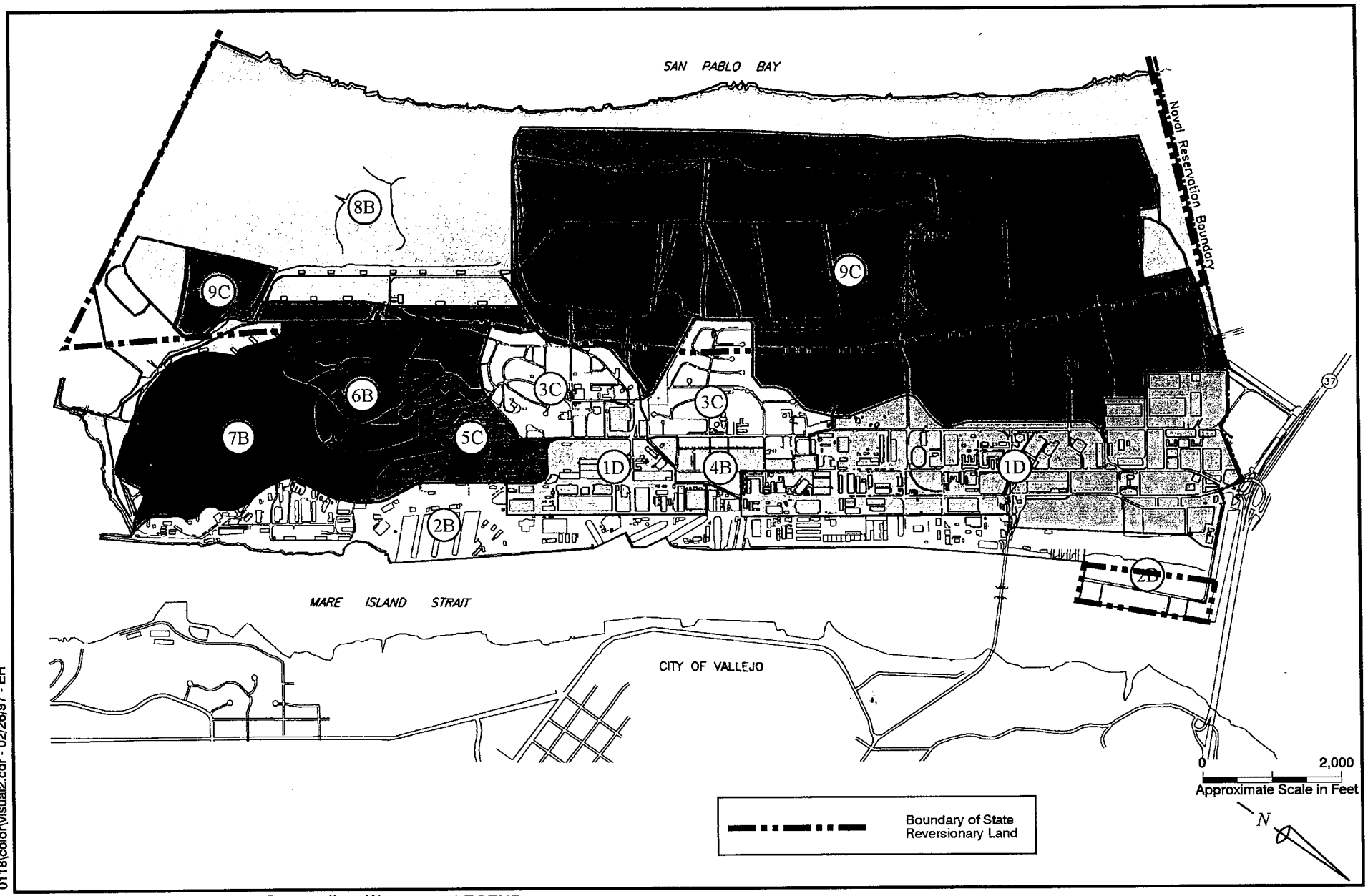
Mare Island is bounded on 3 sides by water, including Mare Island Strait to the east, Carquinez Strait to the south, and San Pablo Bay to the west. Accreted/reclaimed marshlands are north of Mare Island. The visual character of the island includes natural features and human modifications, reflective of over 100 years of development. The southern and western portions of the island are relatively undeveloped, while the northern, central, and eastern areas contain a mixture of urban land uses.

At the south end of the island are 2 hills. The hill located farther south (South Hill) is the highest point on Mare Island and is covered with a mix of open grassland and scattered stands of oak trees. The second hill, north of South Hill, is developed as a 9-hole golf course. The western half of the island is generally low and flat and is composed of wetlands and dredge ponds. This area includes most of the state reversionary land. The northern, central, and eastern portions of the shipyard are characterized by flat to slightly rolling land. These 3 areas have been intensely developed for residential, industrial, and commercial uses. The areas comprise most of the surplus land and properties that will be transferred to other Federal agencies.

For the purposes of visual analysis, Mare Island has been organized into 9 scenic resource areas that appear generally homogeneous in land form, vegetation, human modifications and land uses. Following is a description of each area's visual character. A scenic quality rating has been given to each area based on the 7 BLM factors. The visibility of each area from on-site and off-site also has been indicated. Figure 3-10 illustrates the location of the 9 scenic resource areas. Appendix A includes representative photographs of the various reuse areas on Mare Island and the off-site properties.

Scenic Resource Area 1 - Extensive Urban Development. This area is characterized primarily by a mixture of industrial, warehouse, retail, indoor recreation, and office facilities, and by large expanses of paving. The terrain is flat and low-lying. This area was assigned a rating of Scenic Quality Class D because of its extensive development, lack of visual interest, and mainly negative aesthetic value. Views of the area are mostly internal, with the exception of views from residential areas that are on high points in the City of Vallejo and from Sears Point Road (SR 37), especially from the elevated Napa River Bridge, adjacent to the north end of this area.

Scenic Resource Area 2 - Waterfront Development. This area has been well-maintained and is characterized by industrial and office buildings, large expanses of paving, docks, and overhead cranes. The terrain is flat and low-lying. There are several historic buildings in this area, most with brick facades. Although the general character of this area is industrial, the historic buildings, docks, water (Mare Island Strait), and waterfront structures combine to create interesting views that are unique to San Francisco Bay. This area was assigned a rating of Scenic Quality Class B because of the unique character and visual interest provided by the historic buildings and associated structures of the shipyard waterfront. Views of this area are primarily from Vallejo, across Mare Island Strait. This area also includes portions of the property to be transferred to the US Army.



Nine scenic classes range from Outstanding (A) to Negative (D) scenic qualities. Scenic resource areas have been identified at Mare Island using Bureau of Land Management visual resource management methodology.

LEGEND:

1	Extensive Urban Development	6	Golf Course
2	Waterfront Development	7	Upland Open Space
3	Housing Development	8	Lowland Open Space
4	Historic Housing	9	Extensively Disturbed Open Space
5	Campus Development	A-D	BLM Scenic Quality Classes

Developed by: Tetra Tech, 1995

Visual/Aesthetic Scenic Resource Areas

Mare Island, California

Figure 3-10

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Scenic Resource Area 3 - Housing Development. This residential area is characterized by 1- and 2-story housing units in Farragut Village and Coral Sea Village. Most of this area, with the exception of the westernmost part of Farragut Village, is on surplus land. The terrain in Farragut Village is flat and approximately 20 feet above sea level. The terrain in Coral Sea Village is more rolling and higher, approximately 40 to 80 feet above sea level. There is extensive landscaping within the housing areas, including lawns, street trees, parks, school grounds, and the Marine parade grounds. This area was assigned a rating of Scenic Quality Class C because the visual features are fairly common to the region. Views of this area are primarily internal, although partial views of the area can be seen from Vallejo and from distant viewpoints to the south and west, across San Pablo Bay.

Scenic Resource Area 4 - Historic Housing. This area is characterized by the Classic Revival houses along Captain's Row. Some National Historic Landmarks, including Alden Park and St. Peter's Chapel, are in this area. The terrain is generally flat and lies approximately 20 feet above sea level. There is extensive landscaping in this area, including lawns, street trees, and the park. This area was assigned a rating of Scenic Quality Class B because of its architectural and historic interest. Views of the area are primarily internal, although the trees may be seen from some high points across Mare Island Strait in Vallejo.

Scenic Resource Area 5 - Campus Development. This area, which is on surplus land but includes property being transferred to the US Forest Service and a portion of the property being transferred to the US Army, is characterized by a mix of classroom and office buildings and residential dormitories in a campus-like setting. Similar to the residential areas, there is much more landscaping in this area than in the urban and waterfront scenic resource areas. The terrain ranges from flat to hilly, with slopes ranging from 7 to 60 percent. Most buildings are on the lower more level land. This area was assigned a rating of Scenic Quality Class C because it includes extensive landscaping that provides a mitigating visual feature to the otherwise extensively developed character. The overall development in the area is typical of similar types of development in the region. Views of the lower area of Scenic Resource Area 5 are internal, while the upper area is visible from Vallejo and from viewpoints to the south and west, across San Pablo Bay. The 2 Combat Systems Technical School Command buildings to be transferred to the US Forest Service, located on the ridgeline, are particularly prominent because of their 4-story height.

Scenic Resource Area 6 - Golf Course. The visual character of this area is defined by the tree-lined fairways. The golf course is on the top of the hill north of South Hill, where the terrain ranges from rolling to steep (60 percent slopes). Most of this area is on surplus land. This area was given a

rating of Scenic Quality Class B because, although it has been landscaped, its natural character has been retained, and it has been preserved as open space. Views are both internal and external. The area is highly visible from Vallejo and viewpoints to the south and west, across the Carquinez Strait and San Pablo Bay. The area also is valued because of its panoramic views of the surrounding area.

Scenic Resource Area 7 - Upland Open Space. The visual features of this area include the rugged terrain and mixed grassland and oak tree stands of South Hill. There are bunkers scattered throughout the area, but they are not visible off-site. Except for the communications tower on the hilltop that will be transferred to the US Coast Guard, the area appears natural and undisturbed. With the exception of the small Coast Guard parcel, the remainder of this area is on surplus land. This area was assigned a rating of Scenic Quality Class B because of its natural character, although the scattered buildings at the base of the hill on the adjacent lowland area provide an urban contrast to the natural features. Views from Scenic Resource Area 7 are similar to those from Scenic Resource Area 6, except that the views are unobstructed because of its location at the south end of the island. This is an especially sensitive view area because of its visual quality and its location at the entrance to both Mare Island and Carquinez Strait. The hilltop view provides a panorama of the entire North Bay region, including open expanses of water, marshlands, Mount Diablo, Mount Tamalpais, and Mount St. Helena.

Scenic Resource Area 8 - Lowland Open Space. This area is characterized by the flat low-lying wetlands and open space along the west and south shorelines of the island. Most of this area is on state reversionary land and property that will be transferred to the USFWS. The only apparent human modifications in this area include some scattered small single-story buildings near the base of the 2 hills and some levees and a breakwater along the south shore. This area was assigned a rating of Scenic Quality Class B because it provides a dramatic contrasting landform to the island's hills and a relatively undeveloped shoreline. Views of Scenic Resource Area 8 are primarily from the south part of Vallejo, across Mare Island Strait. Other viewpoints are to the south and west across the Carquinez Strait and San Pablo Bay.

Scenic Resource Area 9 - Extensively Disturbed Open Space. This area, most of which is on state reversionary land, is characterized by open space lands that have been significantly disturbed by earthwork. It is primarily composed of the active and inactive dredge ponds in the flat lowland areas on the west and south sides of the island. It also includes the existing rifle range. This area was assigned a rating of Scenic Quality Class C because, although most of it has been disturbed, the basic landform has not changed substantially. Views of Scenic Resource Area 9 are generally internal, from

higher viewpoints on the island. It also can be seen from viewpoints across the Carquinez Strait and San Pablo Bay, but from these points the area does not appear different than the adjacent Lowland Open Space.

Roosevelt Terrace. This high-density residential area is on surplus land east of Mare Island in Vallejo and adjacent to SR 37. It is characterized by rectilinear 2-story, multi-family housing units separated by small open space areas either paved or planted with grass. There are mature trees in the open space areas and along the streets, and they substantially improve the aesthetics of this residential area. This area was assigned a rating of Scenic Quality Class C because its landscape character is typical of similar residential areas in the region. Views of Roosevelt Terrace are from the local streets and westbound SR 37.

Main Entrance. This area is on surplus land on the Vallejo side of the causeway east of Mare Island and includes the Main Entrance and Building 513. This area is characterized by a mix of old naval cannons and anchors, street signage, traffic cones, utility poles, large expanses of asphalt, and chain-link security fencing. This area was assigned a rating of Scenic Quality Class D because of the extent and character of its urban features.

3.5.2 Views of Mare Island from Surrounding Areas

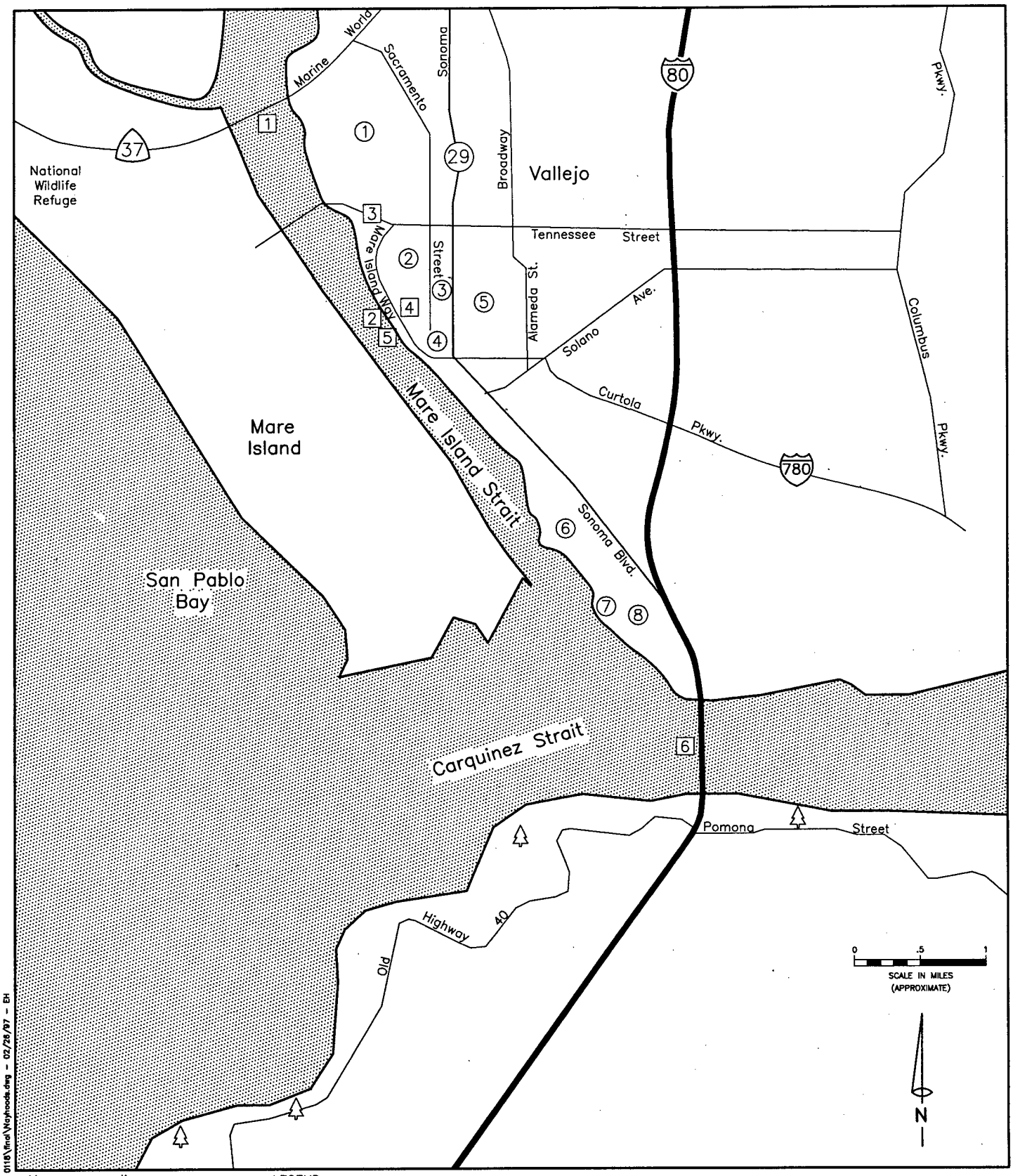
Because of its waterfront setting, Mare Island is visible from many areas within the surrounding viewshed that have viewpoints with high visual sensitivity. These areas include travel routes, residential areas, recreation areas, and commercial areas. Views from these areas are described below. Figure 3-11 indicates the location of these areas.

Travel Routes

The following travel routes have viewpoints with high visual sensitivity.

SR 37. This roadway has views of the island as it approaches Mare Island from the north and from the Napa River Bridge, whose high point (approximately 100 feet above water surface) is above much of the island. This highway has been listed as eligible for an Official Scenic Highway designation by the State Scenic Highway Advisory Committee (Vallejo 1983).

Wilson Avenue/Mare Island Way. This roadway, which runs along the east side of Mare Island Strait, from the marina past the ferry terminal, is considered scenic. It has views of the shipyard, marina, ferry terminal, and Waterfront Memorial Park. This roadway was surveyed by the City of Vallejo for possible inclusion in a scenic highway program (Vallejo 1983b).



Many surrounding areas, including residential areas, travel routes and recreational areas, have sensitive views of Mare Island.

LEGEND:

- Regional Park
- 6 Other Viewpoints
- (8) Neighborhoods

Key to Other Viewpoints:

1 – Napa River Bridge
2 – Yacht Club
3 – Main Entrance
4 – Water Front Mem. Park
5 – Ferry Terminal
6 – Carquinez Bridge

Key to Neighborhoods:

1 – Vallejo Heights
2 – St. Vincents Hill
3 – Marina Heights
4 – Marina Vista/Mariners' Landing
5 – Old City
6 – South Vallejo
7 – Sandy Beach
8 – Seaview

Sensitive Viewpoints/Areas

Mare Island and City of Vallejo, California

Developed by: Tetra Tech, 1995

Figure 3-11

Northbound Interstate 80. This roadway has views of the south end of Mare Island as it crosses Cañada del Cierbo and the Carquinez Strait. The City of Vallejo has surveyed this highway for possible inclusion in a scenic highway program (Vallejo 1983b).

San Pablo Avenue. This roadway follows the south shoreline of the Carquinez Strait, providing sensitive view corridors near Lone Tree Point, Davis Point, and the I-80 interchange.

The San Francisco to Vallejo Ferry. The ferry has unobstructed views of the west, south, and east sides of Mare Island, especially as it travels through Carquinez and Mare Island Straits.

Residential Areas

The following residential areas have viewpoints with high visual sensitivity.

Vallejo Heights and St. Vincent's Hill. Both of these historic areas are in Vallejo on high hills along the east side of Mare Island Strait. These areas range from low-density single-family to higher-density multi-family residential.

Civic Center. The residential areas in the vicinity of the Civic Center are also elevated and have good views of Mare Island. The areas are medium-density.

Old City. The historic area on the hill, east of Sonoma Boulevard, has views of the industrial area of Mare Island. This area is predominantly low-density single-family housing.

South Vallejo and Sandy Beach. These 2 areas are adjacent to Mare Island Strait where it meets Carquinez Strait. They have views of the southern part of Mare Island.

Waterfront Memorial Park. The residential area adjacent to the north side of Vallejo's Waterfront Memorial Park, east of Mare Island Strait, is also on a hill and directly across from the center of the shipyard. This area is medium-density single-family residential. It also has extensive views of the east side of the island.

Residential areas south of Carquinez Strait. These areas also have good views of Mare Island; however, they are 2 to 3 miles or further from Mare Island. They have views of the south and west sides of the island.

Recreation Areas

There are several recreation areas and facilities along the east side of Mare Island Strait and the south shoreline of Carquinez Strait and San Pablo Bay. These areas are especially sensitive because the value of the recreational experience, related to the types of activities most prevalent (walking, biking, fishing, and picnicking) depends in large part on visual quality. Recreation areas with high visual sensitivity include the following areas:

River Park. Located in Vallejo, this park is directly across from the northern end of Mare Island and has views of this area and of the causeway.

Memorial Park. Located in Vallejo, directly across Mare Island Strait from the center of the shipyard, this is primarily a passive recreation park with walks and picnic areas. It has views of almost the entire east side of Mare Island.

The Waterfront Walk. Located in Vallejo, along the east side of Mare Island Strait from the marina to approximately a quarter mile south of the ferry station, this area has an unobstructed view of the island terminal and views of the east side of Mare Island.

East Bay Regional Park District. There are 7 parcels of land owned by the East Bay Regional Park District (EBRPD), located along the south shoreline of the Carquinez Strait and San Pablo Bay from the Carquinez Bridge to Point Pinole. Although approximately 1.5 miles or more from Mare Island, the parcels have unobstructed views of the island. The south end of the island also can be seen from the western portion of EBRPD's Carquinez Strait Regional Shoreline, approximately 2.5 miles to the east.

San Pablo Bay, Carquinez Strait, and Mare Island Strait. Boating is a major recreational activity in the Bay Area, and these water bodies are frequented by recreational boaters. Each water body has unobstructed views of substantial portions of the island, regional parks along the south shoreline of Carquinez Strait, and San Pablo Bay.

Commercial Areas

There are 2 commercial areas on the east side of Mare Island Strait whose views of Mare Island have high viewer sensitivity. They are as follows:

The Marina. This facility is just south of the causeway. Although commercial, the major activity is recreational boating, and scenic quality is an important concern, especially along Mare Island Strait.

The Ferry Terminal. This is a high use commercial area, a portion of which is tourist related; therefore scenic quality is an important concern. There is also a gift shop and a delicatessen affiliated with the terminal.

Industrial Areas

Much of the land opposite the south half of the shipyard along the east side of Mare Island Strait is industrial. Because of the character of the land uses, views from these areas are not considered to have high viewer sensitivity.

3.5.3 Aesthetic and Scenic Resource Regulations

The primary aesthetic and visual resource regulations and their relevant provisions that require consideration include the following:

- NEPA regulations, 40 CFR Parts 1500-1508 §101(b), require measures be taken to ". . . assure for all Americans . . . aesthetically pleasing surroundings."

- CEQA regulations, Cal. Pub. Res. Code, §21001(b), require that it is the policy of the state to "take all action necessary to provide the people of this state enjoyment of aesthetic, natural, scenic, and historical environmental qualities, . . ."

Vallejo's General Plan does not include policies or plans specific to aesthetic or scenic resources.

3.6 BIOLOGICAL RESOURCES

Biological resources consist of native and nonnative plants and animals. Native species are those that naturally inhabit an area, and nonnative species include those that have been introduced into or have invaded an area. Mare Island supports large areas of sensitive habitats and several sensitive species legally protected by the Federal and state governments that could be affected by the disposal and proposed reuse of the shipyard facilities. A large portion of these habitats are on wetlands and open space lands that revert to the state or will be transferred to the USFWS. For discussion purposes, biological resources have been grouped according to the following categories: vegetation, wildlife, sensitive species, and sensitive habitats. Biological conditions describe existing resources. Biological resources are described for the entire property and by specific location where appropriate.

The ROI for biological resources includes the shipyard, Mare Island Strait, Carquinez Strait, adjoining portions of San Pablo Bay, the historic marshlands just north of Mare Island (including Cullinan Ranch), and nearby areas in Vallejo (the Main Entrance and Roosevelt Terrace) that are part of the shipyard. Resources on Mare Island that are limited or restricted in movement (plants, reptiles, small mammals) and those that are more mobile and can range onto and off of Mare Island from surrounding habitat area (fish, birds, large mammals) are included in the ROI.

The Main Entrance and Roosevelt Terrace are developed and do not support native vegetation, sensitive species, or sensitive habitats. These areas contain introduced plant species used in landscaping, such as sycamores (*Platanaceae* spp.) and oleander (*Nerium* spp.). These areas are adjacent to areas of native habitat. The Main Entrance is between 75 acres of marshland to the north in River Park and an undeveloped but disturbed parcel to the south, zoned for development. Roosevelt Terrace is across SR 37 from a marsh system known as White Slough.

Methodology

Surveys were conducted on Mare Island and information was compiled from local experts and past surveys to determine the extent of biological resources. Surveys were conducted along meandering transects throughout all habitat types found on Mare Island. Vegetation surveys of Mare Island were conducted in September 1994 and spring of 1995 to coincide with the flowering periods of sensitive plant species suspected to be found in the area. Distinct habitats were visited during the vegetation surveys, plant communities were mapped, species were identified and recorded, and locations of sensitive species were mapped (see Section 3.6.3). Wildlife site visits were conducted on the island and extensive information was gathered from local experts (Pomeroy

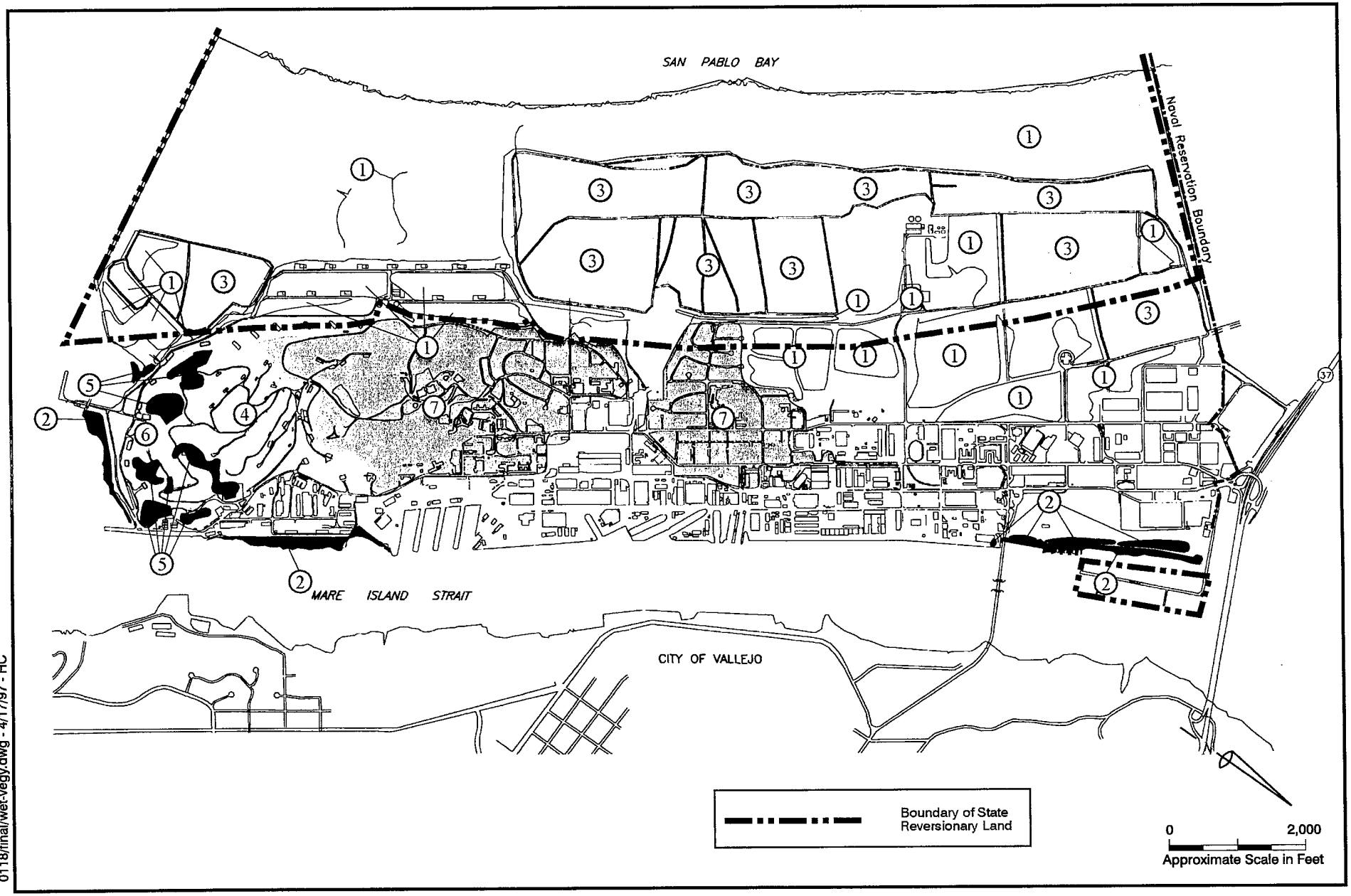
1994; Leong 1994), as well as from past surveys of biological resources on the island (California Department of Fish and Game 1994; Napa-Solano Audubon Society 1994; US Fish and Wildlife Service 1988; US Navy 1989; US Navy undated; US Navy 1989) and other sites within the ROI (California Department of Fish and Game 1994; MPA Design 1993; PG&E 1992; Vallejo 1991; Vallejo 1994c). Two field visits were conducted in September and November 1994 to verify information regarding wildlife resources on the island.

3.6.1 Vegetation Communities

Vegetation communities at Mare Island include wetlands, nonnative grasslands, northern coastal scrub, coast live oak woodland, and urban habitats. Wetlands are considered sensitive habitats by the California Department of Fish and Game (CDFG) and are therefore discussed in Section 3.6.4, "Sensitive Habitats." Vegetation communities at Mare Island are shown in Figure 3-12, and the upland areas are mapped in greater detail on Figure F-2 in Appendix F.

Nonnative grasslands at Mare Island are found on the hilly area in the southern part of the island (on surplus land) and are used primarily for grazing. This plant community consists of a dense to sparse cover of nonnative annual grasses and herbs and is often found adjacent to oak woodlands (Holland 1986), as is the case at Mare Island. Plants generally are dead throughout the dry summer and fall months. Dominant species detected during the survey were nonnative, including wild oats (*Avena* spp.), yellow star thistle (*Centaurea solstitialis*), sweet fennel (*Foeniculum vulgare*), and Harding grass (*Phalaris* spp.). Small areas with remnants of native grassland are scattered across the steep northeast-facing slope on the hill in the southern part of the island, surrounded by nonnative grasslands. Native species detected in these areas include purple needlegrass (*Nasella pulchra*) and blue-eyed grass (*Sisyrinchium bellum*).

There is a small amount of northern coastal scrub on surplus land at Mare Island, along the steep south-facing slope at the southern end of the island adjacent to nonnative grassland and coast live oak woodland. This community is characterized as an area of low shrub, usually 1.5 to 6 feet (0.5 to 2 meters) tall and is found on windy exposed areas (Holland 1986), as is the case at Mare Island. Although the northern coastal scrub community was not surveyed in detail, it appears to be dominated by California sage (*Artemisia californica*), with common species including sticky monkey-flower(*Mimulus aurantiacus*), poison oak (*Toxicodendron diversilobum*), and buckwheat (*Eriogonum* spp.). Dense stands of French broom (*Genista monspessulana*) also are scattered among northern coastal scrub habitat on the steep south-facing slopes of Mare Island.



Surveys conducted in September 1994 approximate the extent of Mare Island vegetation communities.

LEGEND:

- (1) Northern Coastal Salt Marsh
- (2) Brackish Marsh
- (3) Dredge Ponds
- (4) Grasslands
- (5) Coast Live Oak Woodlands
- (6) Northern Coastal Scrub
- (7) Urban Habitat Areas

Source: Wood, 1994; Vallejo, 1994c

Vegetation Communities

Mare Island, California

Figure 3-12

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Coast live oak woodlands are near the summit of the grassy hill in the southern part of the island and are dominated by coast live oak (*Quercus agrifolia*), an evergreen tree that reaches 33 to 80 feet (10 to 25 meters) in height (Holland 1986). This community has a poorly developed shrub layer and a continuous understory of grasses that consists mostly of soft chess (*Bromus hordeaceus*) on Mare Island. Other plant species in this community on Mare Island include valley oak (*Quercus lobata*), California buckeye (*Aesculus californica*), toyon (*Heteromeles arbutifolia*), elderberry (*Sambucus* spp.), and wild rose (*Rosa californica*).

Within the developed portions of Mare Island, the largest area of urban habitat is in Alden Park, located in the historic residential area (Reuse Area 4) on surplus land. Alden Park contains a wide variety of exotic trees brought to the shipyard throughout the past century by naval vessels, particularly in the 1920s and 1930s as a result of an arrangement with the US Department of Agriculture's Bureau of Plant Importations. The trees in Alden Park provide habitat for songbirds. This area has been catalogued, and a recreational walking tour of the area has been established. Other urban habitat areas on Mare Island include the golf course, cemetery, recreation areas, landscaped gardens, parks, and planted roadsides.

3.6.2 Fish and Wildlife Resources

Fish and wildlife resources on Mare Island include invertebrates, fish, reptiles, birds, and mammals (including bats); these species are discussed below. Appendix F contains a listing of these species and other wildlife species found within the ROI that are likely to occur on Mare Island.

No surveys for invertebrate species have been performed at Mare Island, but the monarch butterfly (*Daraus plexippus*) has been observed, seasonally, near St. Peter's Chapel (California Department of Fish and Game 1994). Other invertebrates known to occur on the island include dungeness crab and several species of mosquitoes that breed in the marsh areas of the island.

Mare Island provides shoreline habitat for fish spawning in the salt marshes that extend the length of the western side of the island and are contiguous with marshes in the San Pablo Bay National Wildlife Refuge. These marshes are on state reversionary land. A survey of fish trapped in dry dock operations in 1990 and 1991 detected approximately 15 species, including chinook salmon (*Oncorhynchus tshawytscha*), striped bass (*Morone saxitilis*), starry flounder (*Platicthys stellatus*), and jacksmelt (*Atherinopsis californiensis*). Appendix F contains a list of species detected during these surveys. The dry docks are on surplus land.

Reptile species in upland communities of Mare Island's Federal surplus land include western fence lizard (*Sceloperus occidentalis*) and western rattlesnake (*Crotalus viridis*).

Upland communities at Mare Island provide habitat for a variety of birds, including great blue herons, which have established a rookery near the saltwater reservoir on surplus land on the southern part of the island. Other birds in these communities include the northern harrier (*Circus cyaneus*), white-tailed kite (*Elanus caerulues*), American kestrel (*Falco sparverius*), great horned owl (*Bubo virginianus*), mourning dove (*Zenaida macroura*), and brewer's blackbird (*Euphagus cyanocephalus*). Urban habitat areas, located primarily on surplus land, support birds, such as house sparrow (*Passer domesticus*), rock dove (*Columba livia*), Anna's hummingbird (*Calypte anna*), American robin (*Turdus migratorius*), and European starling (*Sturnus vulgaris*).

A study of bird kills was conducted along a former transmission line in the northern part of Mare Island on surplus land. Approximately 1,028 bird kills, including sensitive species, were identified as possibly being caused by this line within a span of 3 years (PG&E 1992). The power line affected migratory birds that use the wetlands both on Mare Island and in the area the power line traversed. The USFWS had indicated that this may constitute a significant impact (US Fish and Wildlife Service 1993b). This power line was removed in the fall of 1996.

Bat surveys were conducted in 1994 to determine the presence or absence of sensitive species of bats. These surveys detected 1 species, the Mexican free-tailed bat (*Tadarida brasiliensis*), at 30 buildings on surplus land on Mare Island, but it is not a sensitive species. Appendix F lists the buildings surveyed by building number and relative abundance of bat signs found in each location, as well as figures depicting the locations of bat evidence and live bats.

Small mammal species found throughout the island include shrew (*Sorex* spp.), house mouse (*Mus musculus*), California ground squirrel (*Spermophilus beechyi*), and California vole (*Microtus californicus*). Large mammal species found on the island include feral cat (*Felis domesticus*), coyote (*Canis latrans*), red fox (*Vulpes fulva*), and mule deer (*Odocoileus hemionus*).

3.6.3 Sensitive Species

The Navy has consulted with USFWS and CDFG regarding sensitive species that may inhabit Mare Island (US Fish and Wildlife Service 1994b). Endangered, threatened, and rare species with confirmed or suspected presence on Mare Island and within the ROI are listed in Table 3-15.

TABLE 3-15
ENDANGERED, THREATENED, RARE AND SENSITIVE SPECIES
Mare Island Naval Shipyard

Common Name	Scientific Name	Federal Status	State Status	CNPS Status	Occurrence at Mare Island
ENDANGERED, THREATENED, AND RARE SPECIES					
Plants					
Suisun thistle	*Circium hydrophilum* var. *hydrophylum*	PE	none	1B	U
soft bird's beak	*Cordylanthus mollis* ssp. *mollis*	PE	R	1B	P
Congdon's tarplant	*Hemizonia parryi* ssp. *congdonii*	C	none	1B	U
Contra costa goldfields	*Lasthenia conjugens*	PE	none	1B	U
Mason's lilaeopsis	*Lilaeopsis masonii*	SC	R	1B	C
Invertebrates					
California freshwater shrimp	*Syncaris pacifica*	E	E	none	U
Fish					
winter-run chinook salmon	*Oncorhynchus tshawytsha*	E	E	none	CO
delta smelt	*Hypomesus transpacificus*	T	T	none	U
Sacramento splittail	*Pogonicthys macrolepidotus*	PT	CSC	none	P
Birds					
California brown pelican	*Pelecanus occidentalis californicus*	E	E	none	P
American peregrine falcon	*Falco peregrinus anatum*	E	E	none	CO
California black rail	*Laterallus jamaicensis coturniculus*	SC	T	none	C
California clapper rail	*Rallus longirostris*	E	E	none	C
western snowy plover	*Charadrius alexandrinus nivosus*	T	CSC	none	U
Mammals					
salt marsh harvest mouse	*Reithrodontomys raviventris*	E	E	none	C
suisun shrew	*Sorex ornatus sinuosus*	C	CSC	none	P
salt marsh wandering shrew	*Sorex vagrans haliceotes*	C	CSC	none	P
OTHER SENSITIVE SPECIES					
Plants					
lentus aster	*Aster lentus*	SC	none	1B	U
San Joaquin spearscale	*Atriplex joaquiniana*	SC	none	1B	U
hispid bird's beak	*Cordylanthus mollis* ssp. *hispidus*	SC	none	1B	U
marsh gumplant	*Grindelia stricta* var. *angustifolia*	none	none	4	C
delta tule pea	*Lathyrus jepsonii* var. *jepsonii*	SC	none	1B	P
woolly-headed lessingia	*Lessingia hololueca*	none	none	3	U
delta mudwort	*Limosella subulata*	none	none	2	P
Marin knotweed	*Polygonum marinense*	SC	none	3	P
rayless ragwort	*Senecio aphanactis*	none	none	2	U
showy Indian clover	*Trifolium amoenum*	PE	none	1B	U
Fish					
green sturgeon	*Acipenser medirostris*	SC	none	none	P
longfin smelt	*Spirinchus thealeicthys*	SC	CSC	none	P
Reptiles					
northwestern pond turtle	*Clemys marmorata marmorata*	SC	CSC	none	U
Birds					
great blue heron	*Ardea herodias*	none	CSC	none	C
Barrow's goldeneye	*Bucephala islandica*	none	CSC	none	CO
osprey	*Pandion haliaetus*	none	CSC	none	CO
long-billed curlew	*Numenius americanus*	none	CSC	none	C
Caspian tern	*Sterna caspia*	none	CSC	none	CO
burrowing owl	*Athene cunicularia*	none	CSC	none	C
loggerhead shrike	*Lanius ludovicianus*	SC	CSC	none	CO
tricolored blackbird	*Agelaius tricolor*	SC	CSC	none	P
salt marsh common yellowthroat	*Geothlypis trichas sinuosa*	SC	CSC	none	C
Suisun song sparrow	*Melospiza melodia maxillarus*	SC	CSC	none	P
San Pablo song sparrow	*Melospiza melodia samuelis*	SC	CSC	none	CO
Mammals					
Townsend's big-eared bat	*Plectus townsendii townsendii*	SC	CSC	none	P
California mastiff bat	*Eumops perotis californicus*	SC	CSC	none	P
San Pablo vole	*Microtus californicus sanpabloensis*	SC	CSC	none	P
San Francisco dusky-footed woodrat	*Neotoma fuscipes annectans*	SC	CSC	none	P

Federal Status
E = Endangered
T = Threatened
PE = Proposed endangered
PT = Proposed threatened
C = Candidate for listing as threatened or endangered
SC = Species of concern (former Category 2 candidate)

CNPS Status
1B = Plants rare and endangered in California and elsewhere
2 = Plants rare and endangered in California but more common elsewhere
3 = Plants about which more information is needed
4 = Plants of limited distribution

State Status
E = Endangered
T = Threatened
R = Rare
CSC = California species of special concern

Occurrence at Mare
C = Confirmed
P = Possible
CO = Confirmed occasional visitor
U = Unlikely

Sources: California Department of Fish and Game 1994a; 1994b; 1996a;1996b;1996c and US Fish and Wildlife Service 1993a; 1994a;1994b; 1995a;1995b;1996

Sensitive species include those listed by the USFWS or by the CDFG as endangered, threatened, rare, proposed for endangered or threatened status, or candidate species for endangered or threatened status. Also included as sensitive species are those listed by the California Native Plant Society (CNPS) and species of special concern to the CDFG. Table 3-15 lists endangered, threatened, and rare species that were determined through preliminary research to inhabit the ROI. Species proposed for endangered or threatened listing, including candidate species, are included in this list because these species could be listed prior to the completion of this project. Table 3-15 also lists other sensitive species (Federal species of concern and state species of special concern) that were determined through preliminary research to exist in the ROI for Mare Island. The following discussion focuses on the possibility for those species listed in Table 3-15 to inhabit the island.

Endangered and Threatened Species

Endangered and threatened species that inhabit the ROI and that inhabit or may inhabit the island include plants, invertebrates, fish, birds, and mammals. These species are found in a number of different habitats at various places around the island and the ROI and could occur on surplus land, state reversionary land, and land being transferred to other Federal agencies, particularly the USFWS.

The Suisun thistle (*Cirsium hydrophilum*) is a perennial herb in the aster family, with slender erect stems and pale lavender-rose flower heads that occur singly or in loose groups. This species is restricted to saltwater and brackish water marshes in the Bay Area. Small areas of suitable habitat for this species are available on the island (primarily on state reversionary land), but it is unlikely that this species is present at Mare Island because surveys in 1993 and 1994 during flowering periods did not detect this distinctly visible species, and it has not been detected in the immediate area (Wood 1994). The closest record of this species is at Grizzly Island, approximately 10 miles east of Mare Island.

Soft bird's-beak (*Cordylanthus mollis* ssp. *mollis*) is an annual hemiparasite in the snapdragon family. This species is restricted to saltwater and brackish water marshes in the northern Bay Area. This species was recorded on Mare Island in 1885 but was not identified in 1993 or 1994 surveys, possibly being buried by fill material on state reversionary land and land being transferred to the USFWS (Wood 1994). There is abundant appropriate habitat on the island for this species, but soft bird's-beak has prominent foliage and would have been flowering during surveys in 1994. Therefore, it is suspected that this species has been extirpated from the island (Wood 1994).

The California freshwater shrimp (*Syncaris pacifica*) exists within 10 miles of Mare Island, and its habitat is quiet tree-lined pools and undercut banks along small, free-flowing, permanent streams. There is no habitat for this species on Mare Island. This species is known historically to inhabit the Napa River but is now absent from more than half of its historic range, including the Napa River drainage.

Three endangered or threatened fish species are found seasonally on Mare Island—the winter-run chinook salmon (*Oncorhynchus tshawytscha*), the delta smelt (*Hypomesus transpacificaus*), and the Sacramento splittail (*Pogonichtys macrolepidotus*). There is no established "run" of the chinook salmon in the Napa River drainage, but several salmon have been identified from surveys conducted at the Mare Island dry dock operations in 1990 and 1991. Because of the dates that salmon were recorded in these operations, it is unlikely that they are winter-run chinook salmon (Stern 1994). However, the CDFG recommends that if any salmon have been trapped in these operations, the possibility exists for the Federally threatened and state listed endangered winter-run chinook salmon to be trapped (McKee 1994).

The delta smelt, a Federally-listed threatened species in 1993, is native to the Sacramento-San Joaquin estuary (Wang 1986). This species occurs from the lower portions of the Sacramento and San Joaquin rivers, through the delta, and into Suisun Bay. The delta smelt is occasionally found in the Carquinez Strait, San Pablo Bay, and south San Francisco Bay (Moyle 1976; Wang 1986; Moyle et al. 1992).

The delta smelt spends most of its adult life in the area where the freshwater from the Sacramento and San Joaquin rivers meets the more saline waters of the San Francisco Bay Estuary. The delta smelt changes its location in the San Francisco Bay Estuary from year to year to follow the change in location of the freshwater and saltwater mixing zone and seasonal changes in temperature (Moyle et al. 1992; Swanson and Cech 1995).

The delta smelt usually completes it life cycle in a single season, just long enough for breeding. The spawning period generally ranges from February to June or July. During this period, the adult swims upstream into river channels and sloughs in the western delta and Suisun Marsh to deposit its eggs. After hatching, the emerging larvae ride downstream currents until they reach the freshwater/saltwater mixing zone in the Suisun Bay and the delta. The delta smelt then resides in the mixing zone for most of its adulthood before returning to fresh water for spawning (Wang 1986). Some of the juvenile smelts may migrate further downstream to the Carquinez Strait and San Pablo Bay before turning back for spawning. The distribution pattern of delta smelt is mainly affected by the freshwater flows from the rivers into the San Francisco Bay Estuary. During the recent dry years, about 20 percent of the

fish were distributed in the lower San Joaquin and Sacramento rivers (Winternitz 1994). In 1995 (one of the wet years), the delta smelt was found further west, centered in Suisun Bay, with some fish being found in San Pablo Bay (Wintermitz 1995). This is because the additional fresh water flowing into the San Francisco Bay Estuary moves the freshwater/saltwater mixing zone further west into the San Francisco Bay Estuary during wet years.

The Sacramento splittail is also a native California freshwater fish. It was proposed as a Federally threatened species in 1994. This species occurs upstream in the San Joaquin River and extends to the lower reaches of the Sacramento River, the delta, Suisun Bay, and San Pablo Bay (Wang 1986).

The splittail spawns from late January or early February to July. Juvenile splittail occur in Suisun Bay and most of the delta sloughs in late winter and spring. As the summer progresses, splittail larvae move to the deeper waters of Suisan and San Pablo bays (Wang 1986). During the summer, most large juvenile and adult fish reside in the central and western delta, Suisun Bay, and Suisun Marsh (Baxter 1994).

Both the delta smelt and the Sacramento splittail are native California freshwater fish. They could occur in the vicinity of Mare Island, in particular, during those wet years when river flow is high and the dispersal of those fish tends to be greater.

Endangered and threatened bird species that inhabit or may inhabit Mare Island include the California brown pelican (*Pelecanus occidentalis californicus*), American peregrine falcon (*Falco peregrinus anatum*), California black rail (*Laterallus jamaicensis coturniculus*), California clapper rail (*Rallus longirostris*), and western snowy plover (*Charadrius alexandrinus nivosus*). These birds could inhabit surplus and state reversionary land, as well as land being transferred to the USFWS. The California brown pelican is known to be present on the island but is not known to nest. The only recorded sighting of a western snowy plover on the island is of a single individual in 1981, so it is unlikely that this species nests on the island. The American peregrine falcon is an occasional visitor to the island during the winter. Both rails (California black rail and California clapper rail) are resident species that forage and nest in the large tidal marshes on the west side of Mare Island in state reversionary land.

One endangered mammal species, the salt marsh harvest mouse (*Reithrodontomys raviventris*), inhabits Mare Island. The salt marsh harvest mouse lives in tidal wetland habitats, composed mainly of pickleweed (*Salicornia virginica*), and has been identified in nearly all of the wetland areas of the island, including the dredge disposal areas on the western side (Figure 3-14). Most of this habitat is on state reversionary land and on land to be

transferred to the USFWS, but there are also small areas of this habitat also occur on surplus land. Habitat for the salt marsh harvest mouse has been severely depleted throughout its range, prompting its listing by the USFWS and CDFG as an endangered species. To allow for continued use of the dredge disposal areas by Mare Island Naval Shipyard and to promote the conservation of the salt marsh harvest marsh and other endangered/sensitive species, the Navy entered into a memorandum of understanding (MOU) with the USFWS in July 1988 (USFWS 1988).

While Mare Island was an active Navy shipyard, the MOU was required because of conflicts between ongoing dredge disposal area maintenance requirements and endangered species protection. The dredge material sediment must be periodically dried and compacted, and is also excavated and used to raise dredge pond levees. During the drying process the dredge disposal areas are colonized by pickleweed vegetation and, subsequently, the endangered salt marsh harvest mouse. When the pickleweed is removed from the dredge disposal areas as part of the routine maintenance activities, habitat for the endangered salt marsh harvest mouse is destroyed.

As a result of this MOU, the following activities occurred on the island to improve wetland habitats:

- Set aside 219 acres of former inactive dredge disposal ponds, containing 180 acres of nontidal wetlands to be maintained as permanent habitat for the salt marsh harvest mouse. (This property is now reverting to the State of California, with smaller portions transferring to the USFWS or being disposed of from Federal ownership with conservation easements in place).

- Remove piled debris to reduce predation by foxes and coyotes that use these areas for cover.

- Remove, repair, or raise levees and construct soil benches on inside slopes of reconstructed and raised levees, as appropriate.

- Enhance pickleweed growth by placing soil from shipyard dredge ponds in barren areas and allowing for tidal flow into these areas.

- Create or reclaim 34 acres of wetlands and developed tidal marsh areas to provide more habitat for salt marsh harvest mice and other sensitive species.

- Study and monitor salt marsh harvest mouse habitat requirements on Mare Island.

- Convert duck ponds on the south end of Mare Island from stagnant ponds that were breeding mosquitoes to tidal flush areas, reducing the need for pesticides.

- Study sensitive species on Mare Island.

- Prepare a draft MOU for a permanent overlay of a National Wildlife Refuge on Mare Island. (This action is being addressed as part of the Federal transfer of Navy land to USFWS).

Sensitive Plants

Based on surveys conducted in 1993 (Ruygt 1993) and 1994 (Wood 1994), a review of the California Natural Diversity Database (California Department of Fish and Game 1994), and a review of Skinner and Pavlik (1994), 6 species of sensitive plants were determined to have a moderate potential to be found on Mare Island (Table 3-15). Two of these species, Mason's lileaopsis (*Lilaeopsis masonii*) and marsh gumplant (*Grindelia stricta* var. *angustifolia*) were detected on-site during 1994 surveys (Figure 3-13a and b). All known locations of Mason's lileaopsis and Marsh gumplant on Federal surplus land are within the conservation easement areas. Additional populations of Marsh gumplant occur on land reverting to the State of California or being transferred to the USFWS.

Mason's lilaeopsis is a member of the carrot family. It forms dense to sparse colonies on tidally influenced streambanks and marshes near sea level in the Sacramento-San Joaquin River Delta and lower Napa River. It flowers June through August. Mason's lilaeopsis is listed as rare by the CDFG, is a Federal C2 candidate for listing as threatened or endangered, and is on the CNPS list 1B. During the 1994 survey, Mason's lilaeopsis was detected at 2 general locations on the southeastern shores of Mare Island (Figure 3-13b), both in brackish marsh habitats. The presence of Mason's lilaeopsis is important because this species has not been previously recorded at Mare Island and because these 2 populations may be in the most saline habitats yet recorded for this species. Mason's lilaeopsis at Mare Island has colonized areas filled by the Navy during its ownership of Mare Island that were formerly part of San Francisco Bay. Individuals were not counted for the Mason's lilaeopsis because they grow in clumps and could be destroyed if separated. Estimates shown in Figure 3-13b define the percentage of ground surface covered by this species. All identified Mason's lilaeopsis populations were on surplus land. All the known locations of Mason's lilaeopsis and Marsh gumplant on Federal surplus land are within the conservation easement areas. Additional populations of March gumplant occur on land reverting to the State of California or being transferred to the USFWS.

Marsh gumplant is a low perennial shrub in the sunflower family. This plant grows infrequently in coastal salt marshes and on adjacent disturbed sites throughout the Central Coast, from Napa and Sonoma counties to Monterey County. Marsh gumplant is on the CNPS list 4, but it is not state or Federally protected. Marsh gumplant was detected during the 1994 surveys throughout the brackish marshes on the eastern and southern shores of Mare Island (Figure 3-13a), in the salt marsh in the southwestern corner of the island, and on disturbed sites at scattered locations among the dredge ponds. Most of these detections were on state reversionary land and land being transferred to the USFWS; however populations also were noted on surplus land. Approximately 5,850 individual marsh gumplants were detected on Mare Island during these surveys.

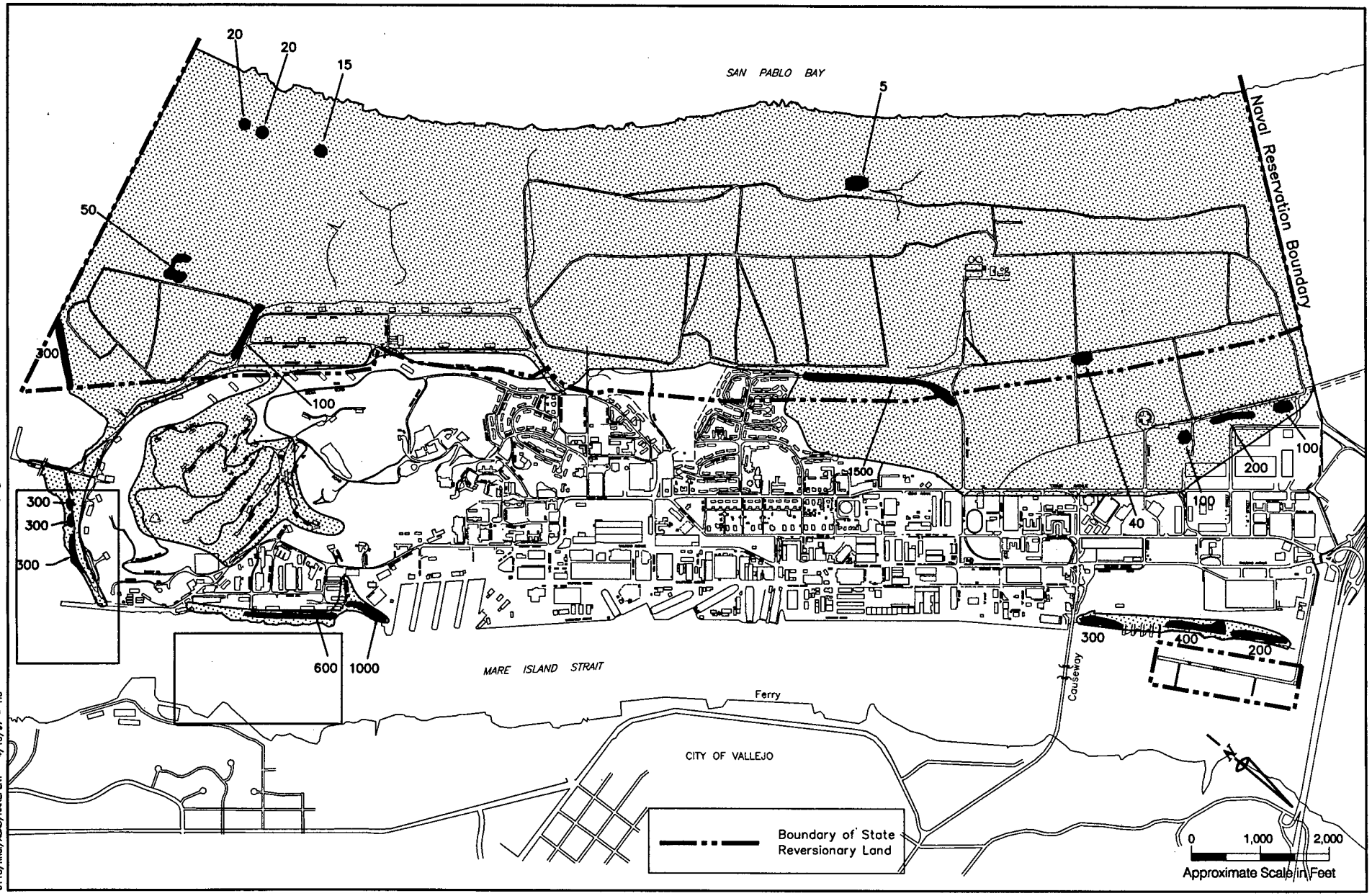
Delta tule pea (*Lathyrus jepsonii* var. *jepsonii*) is a robust perennial vine belonging to the pea family. It is a Federal species of concern, is on the CNPS list 1B, and is a California species of special concern. Although delta tule pea has been recorded within the ROI, it was not detected during the 1994 survey. Due to the abundant suitable habitat, it has a moderate potential to exist on Mare Island.

Marin knotweed (*Polygonum marinense*) is a many-branched perennial herb in the buckwheat family. It is a Federal species of concern and is on the CNPS list 3. Marin knotweed infrequently inhabits coastal salt marshes in the San Francisco Bay Area. It was not detected in recent surveys and has not been recorded on Mare Island; however, it is found nearby along Cuttings Wharf on the Napa River. Due to the abundant suitable habitat, the Marin knotweed has a moderate potential to exist on Mare Island.

Delta mudwort (*Limosella subulata*) is a tufted annual belonging to the figwort family. It exists on muddy to sandy intertidal flats, marshes, and swamps in the Sacramento and San Joaquin river deltas. Delta mudwort is on the CNPS list 2, is a California species of special concern, but has no Federal status. Delta mudwort was not detected during the 1994 survey. Due to the presence of suitable habitat, the delta mudwort has a moderate potential to exist on Mare Island.

Sensitive Wildlife

Fish, reptile, bird, and mammal species are other species known or suspected in the ROI, including Mare Island itself. Comments on the status of these species are presented in Table 3-15. Other sensitive fish species within the ROI include the longfin smelt (*Spirinchus theleicthys*) and green sturgeon (*Acipenser medirostris*). Northwestern pond turtles (*Clemmys marmorata marmorata*)



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The undeveloped areas of Mare Island were surveyed for rare plants in September 1994.

Source: Wood, 1994

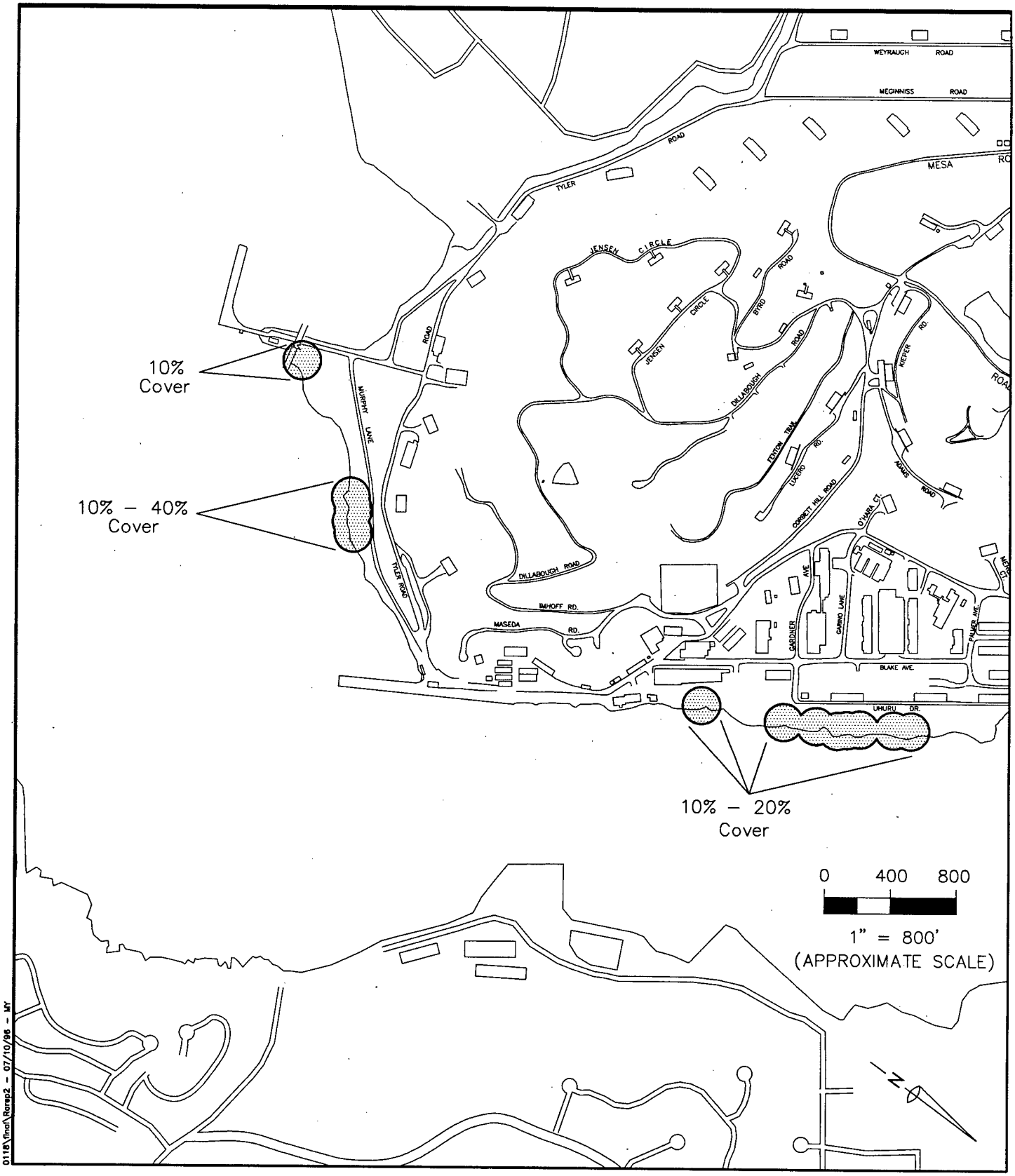
LEGEND:

- Area Surveyed for Rare Plants
- Marsh Gumplant *(Grindelia Stricta* var. *angustifolia)*
- 100 — Estimated Number of Plants
- Area Containing Mason's Lilaeopsis(see Figure 3-13b)

Rare Plant Surveys

Mare Island, California

Figure 3-13a



The undeveloped areas of Mare Island were surveyed for rare plants in September 1994.

LEGEND:

Mason's lilaeopsis
(Lilaeopsis masonii)

Area Shown

Source: Wood, 1994

Locations of Mason's Lilaeopsis
Mare Island, California

Figure 3-13b

inhabit freshwater ponds or streams but are unlikely to inhabit Mare Island. However, they exist within 6 miles of Mare Island to the north, between Vallejo and Napa.

Sensitive bird species with confirmed presence on Mare Island include the salt marsh common yellowthroat (*Geothlypis trichas sinuosa*), loggerhead shrike (*Lanius ludovicianus*), tricolored blackbird (*Agelaius tricolor*), San Pablo song sparrow (*Melospiza melodia samuelis*), and Suisun song sparrow (*Melospiza melodia maxillarus*). Other species have nesting sites or rookeries on Mare Island that are designated special concern areas by the CDFG. These include the great blue heron (*Ardea herodias*) rookery on the western side of the island and long-billed curlew (*Numenius americanus*), as well as burrowing owl (*Athene cunicularia*) burrow sites. Burrowing owls have been detected on Mare Island as recently as 3 years ago (Napa-Solano Audubon Society 1994).

Sensitive mammal species known or suspected at Mare Island and within the ROI include the Suisun shrew (*Sorex ornatus sinuosus*), salt marsh wandering shrew (*Sorex vagrans halicoetes*), Townsend's western big-eared bat (*Plecotus townsendii townsendii*), California mastiff bat (*Eumops perotis californicus*), San Pablo vole (*Microtus californicus sanpabloensis*), and San Francisco dusky-footed woodrat (*Neotoma fuscipes luciana*). One specimen that may have been a Suisun shrew was trapped incidental to other trapping studies in 1987 (Pomeroy 1994). Field studies were conducted in September 1994 to determine the presence of any sensitive bat species, but no sensitive species were detected during these surveys (Constantine 1994).

3.6.4 Sensitive Habitats

Wetlands at Mare Island are listed as sensitive habitats by the CDFG (CDFG 1992) and are the only communities on Mare Island that are formally listed as sensitive. Nearly all tidal wetlands, all dredge ponds, except about two-thirds of pond 3E, and a small portion of nontidal wetlands on the island are on state reversionary land. The remaining wetlands and dredge ponds are on surplus land being disposed of with restrictive conservation easements and on land being transferred to the USFWS (see Figure 3-14). Coast live oak woodland at Mare Island also may be considered sensitive due to the depletion of native habitat in the San Francisco Bay Area. The Vallejo-Benicia-Fairfield Open Space Planning Study (Brady 1991) directed that existing oak woodland be included in designated open space areas due to local depletion of this community. This community is entirely on surplus land.

Wetlands

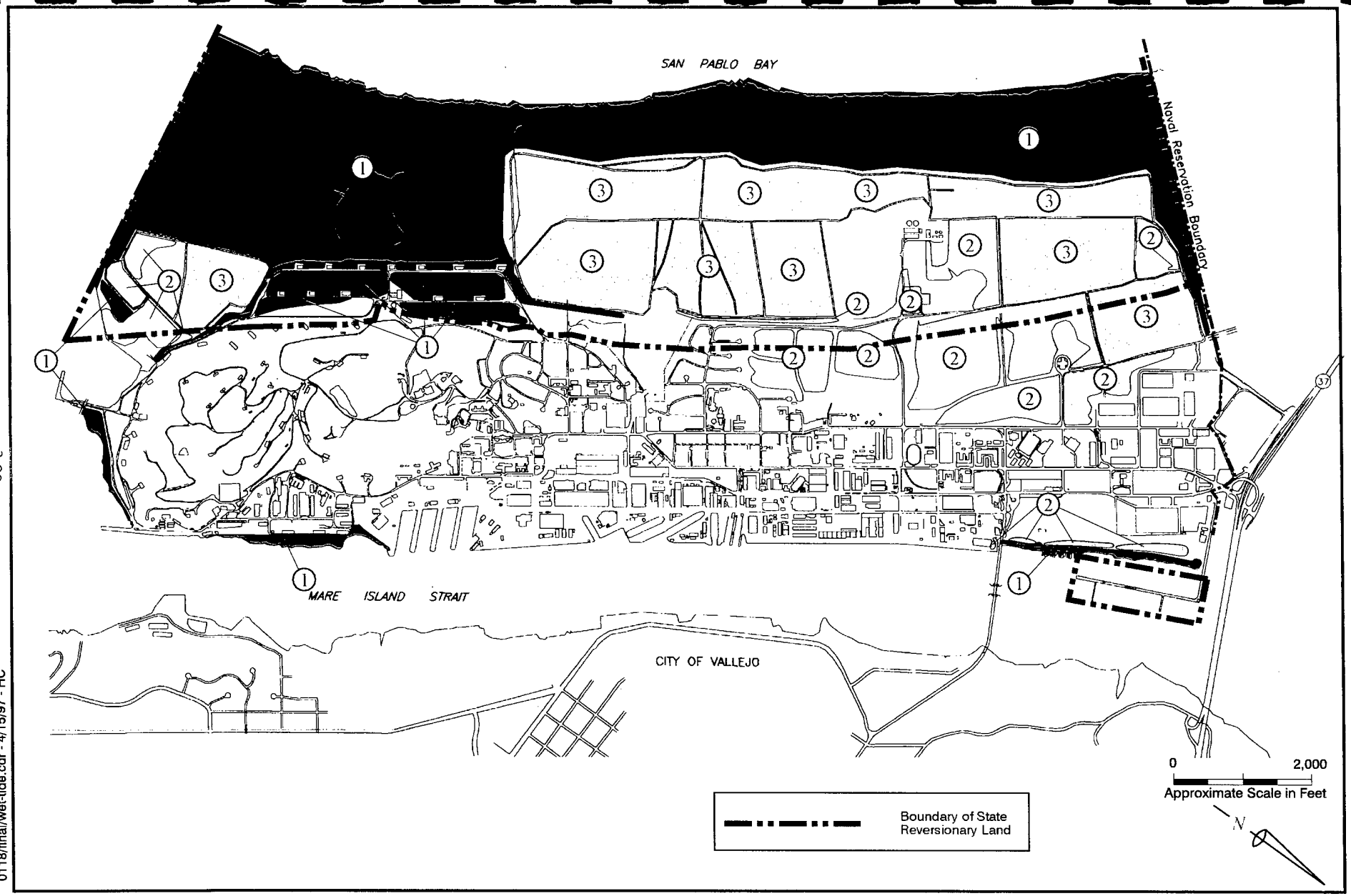
Wetland communities in the San Francisco Bay Area have been extensively developed. Approximately 127 square miles of marshland remain in the Bay

Area, of which about 2 percent is represented by the Mare Island habitat. Three wetland communities are present at the shipyard (Figure 3-14)—northern coastal salt marsh, coastal brackish marsh, and diked marsh or dredge ponds. Approximately 0.34 square miles (215 acres) of nontidal wetlands, 1.27 square miles (813 acres) of tidal wetlands, and 0.74 square miles (476 acres) of active dredge ponds exist at Mare Island (Figure 3-14). Tidal wetlands are areas that are influenced by tidal action and that include both northern coastal salt marsh and brackish marsh areas at Mare Island, while nontidal marshes on the island include areas of northern coastal salt marsh and a small area of freshwater diked marsh in the northernmost part of the island. Northern coastal salt marsh is usually found along sheltered inland margins of bays, lagoons, and estuaries. Soils are subject to regular tidal inundation by salt water at least part of the year. An extensive stand of high quality northern coastal salt marsh occurs on the entire western edge of Mare Island between the mean high tide line and the dredge pond levees. This area is entirely on state reversionary land and is contiguous with wetlands on the San Pablo Bay National Wildlife Refuge to the north. Northern coastal salt marsh at Mare Island is dominated by pickleweed. The areas of this marsh habitat that receive maximum inundation during high tides are dominated by Pacific cordgrass (*Spartina foliosa*) with scattered stands of prairie bulrush (*Scirpus robustus*). Marsh gumplant is locally abundant in Mare Island's northern coastal salt marsh, especially on disturbed sites.

Coastal brackish marsh is entirely on surplus land and is similar to salt marsh habitat but is somewhat less saline. Salinity varies considerably and may increase at high tide or during seasons of low freshwater runoff. Like northern coastal marsh, coastal brackish marsh is subject to tidal action, although generally to a lesser extent.

These 2 communities of wetlands are usually found in combination, especially toward the ocean and near estuaries, such as that of the Napa River (Holland 1986). Coastal brackish marsh on the island is restricted to narrow bands along Mare Island Strait and in ditches and channels subject to tidal influence. Characteristic plant species detected at Mare Island include several species of bulrush (*Scirpus* spp.), soft flag (*Typha latifolia*), pickleweed, jaumea (*Jaumea carnosa*), Pacific cordgrass, and saltgrass (*Distichlis spicata*). Sensitive plant species detected within this plant community on-site include marsh gumplant and Mason's lilaeopsis (*Lilaeopsis masonii*).

Diked marsh or nontidal wetlands at Mare Island support salt marsh habitat that has been isolated from tidal action by the construction of levees. Dredge ponds on-site represent reclaimed land, most of which is presumed to have historically supported tidally-influenced northern coastal salt marsh. These ponds are primarily on state reversionary land, with smaller areas on with



3-89

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Surveys conducted in September 1994 approximate the extent of wetlands at Mare Island. Wetlands and dredge ponds are within state reversionary land or land being transferred to the USFWS, or are within conservation easements (See Figure 1-5).

LEGEND:

1 Tidal Wetlands

2 Non-tidal Wetlands

3 Dredge Ponds

Source: Wood, 1994; Vallejo, 1994c

Wetlands and Dredge Ponds

Mare Island, California

Figure 3-14

constructed berms and levees. The ponds were used as receiver sites for sediments dredged out of Mare Island Strait. The dredged materials were alternately pumped into the various ponds and then allowed to dry. At any given time, the ponds might support open water, mudflats, dry bare ground and ruderal or pickleweed marsh habitats. It appears that most nontidal wetlands on-site were once used as dredge ponds but are presently inactive. These sites have been colonized by characteristic native salt marsh species, such as pickleweed, broad-leaf peppergrass (*Lepidium latifolium*), coyote bush (*Baccharis pilularis*), spearscale (*Atriplex triangularis*), Russian thistle (*Salsola soda*), bristly ox-tongue (*Picris echioides*), ruby sand-spurry (*Spergularia rubra*), saltgrass, and foxtail barley (*Hordeum jubatum*).

Importance of Wetlands to Wildlife. Due to the depletion of wetland communities in the San Francisco Bay Area, wildlife species that depend on wetland habitats have declined significantly within the past century. Wetland habitats are important foraging and cover areas for migrating fish, such as the winter run chinook salmon identified at Mare Island. Wetland habitats also are important nesting and feeding areas for many bird species. Species found in salt marshes on Mare Island include the California clapper rail, salt marsh yellowthroat, and canvasback (*Aythya valisineria*). Species common to brackish marsh include California clapper rail, canvasback, widgeon (*Anas americana*), mallard (*Anas platyrhynchos*), and cinnamon teal (*Anas cyanoptera*). Diked marshes contain such species as canvasback, mallard, marbled godwit (*Limosa fedoa*), American avocet (*Recurvirostra americana*), and long-billed curlew. Small mammal species in marshland areas at Mare Island include the salt marsh harvest mouse and Suisun shrew. The salt marsh harvest mouse has been detected in all wetland communities on Mare Island, including dredge ponds and nontidal areas on state reversionary land, land being transferred to USFWS, and surplus land (Bias and Morrison 1993).

3.6.5 Plans and Policies

Endangered Species Act (Section 7 and 10a Consultation)

Federal law directs that all Federal agencies and departments use their authority to conserve endangered and threatened species under the guidance of the ESA.

The Federal Endangered Species Act (ESA), 16 U.S.C. §1531 *et seq.*, requires that the USFWS issue a permit prior to actions that would result in killing, harming, or harassing a Federally-listed endangered or threatened species. This permit process is directed under Section 7 of the ESA for actions in which a Federal agency is involved and in a similar process under Section 10a of the ESA for state and local agencies, as well as for individuals. Federal agencies are required to consult with the USFWS (or National Marine Fisheries Service for

some species) prior to undertaking actions that may affect endangered species. A Federal agency is required to obtain a biological opinion from the USFWS on whether its actions may jeopardize the continued existence of any threatened or endangered species. Federal agencies are prohibited from enacting activities that would jeopardize the continued existence of these species. A biological opinion has been prepared by the USFWS for Mare Island and is included in Appendix F. For more discussion of the biological opinion, refer to Section 4.6. Upon disposal of the Federal property at Mare Island, all non-Federally held lands would be subject to ESA Section 10a requirements.

California provides similar procedures for state agencies to follow under the California Endangered Species Act, California Fish and Game Code §2090 *et seq.* The CDFG can adopt a Federal biological opinion as a state biological opinion under California Fish and Game Code §2095. Plants listed as rare by the CDFG are listed under the Native Plant Protection Act, California Fish and Game Code §1900. Consultation with CDFG is not required under this act but is recommended (Shaffer 1994). Upon disposal of Federal property at Mare Island, all non-Federally held lands would be subject to these state regulations.

Cooperative Agreement for Fish and Wildlife Resources

A Cooperative Agreement was signed in 1991 by the USFWS, CDFG, and Mare Island Naval Shipyard. The goal of the agreement was to achieve the "protection, enhancement, and management of fish and wildlife resources" on the island. Its more specific function was to define the roles of the signatories in implementing the wildlife section of the Natural Resources Management Plan prepared by the Navy for Mare Island (US Navy 1989). Under this cooperative agreement, importing fish or other wildlife to the island would be authorized only by mutual consent of the signatory agencies and only if supportive documentation were provided. The agreement was intended to remain in effect indefinitely but could be modified or amended by mutual agreement of authorized representatives from the signatory agencies.

Wetlands Regulations

Executive Order 11990 requires that Federal agencies, to the extent permitted by law, avoid construction in wetlands unless no practicable alternative to the construction exists and that all practicable measures to minimize harm to wetlands, including opportunities for public review of plans or proposals are provided. It further requires that any disposal to non-Federal public or private parties of properties containing wetlands shall reference in the conveyance uses that are restricted under identified Federal, state or local wetland regulations.

Wetlands are considered sensitive and declining resources by several regulatory agencies, including the CDFG and the USFWS. The US Army Corps of Engineers (COE) considers wetlands to be important to the public interest in that they perform significant biological functions, such as providing nesting, breeding, foraging, and spawning habitat for a wide variety of resident and migratory animal species (US Army Corps of Engineers Regulatory Program Regulations, §33 C.F.R. 320.4). Wetlands also provide for the movement of water and sediments, groundwater recharge, water purification, and storage of storm water runoff.

The COE defines wetlands as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions," 40 C.F.R. §230.3(t). Indicators of 3 wetland parameters (hydric soils, hydrophytic vegetation, wetland hydrology) are used to determine if an area is a jurisdictional wetland (Environmental Laboratory 1987).

The COE regulates impacts to wetlands and other waters under Section 404 of the Clean Water Act (CWA), 33 U.S.C. §1251. Projects that involve excavating dredged or fill material into waters of the US, including wetlands, must be reviewed and authorized by the COE and reviewed by the US Environmental Protection Agency. The COE also regulates work extending bayward of the mean high water line under Section 10 of the Rivers and Harbors Act of 1899. COE permits are required for projects that could affect wetlands and the shoreline of Mare Island regardless of whether these impacts occur on state reversionary land, on land transferred to a Federal agency, or on surplus land.

The CDFG has the authority to reach an agreement with an individual proposing to affect intermittent or permanent streams and other wetlands pursuant to Section 1603 of the California Fish and Game Code. The CDFG generally evaluates the information gathered during preparation of the environmental assessment document and attempts to satisfy its concerns during the CEQA process. In accordance with its policy of no net loss of wetland habitat, the CDFG encourages completing a streambed alteration agreement, which includes a mitigation program for impacts to all wetlands, regardless of acreage.

As required by Section 401 of the CWA , any applicant for a Federal permit to conduct any activity that may result in any discharge into navigable waters must provide a certification from the Regional Water Quality Control Board that such discharge will comply with the CWA. Water quality certification is a certification that there is reasonable assurance that an activity that may result in discharge to navigable waters of the US will not violate water quality

standard, where the activity requires a Federal license or permit, Title 23, California Administrative Code, §3830 *et. seq.* This requirement would be applicable to state, local, or Federal actions.

The San Francisco Bay Plan was prepared to outline the policies to guide the future uses of the bay and shoreline (BCDC 1969). Bay filling (including placement of piers, pilings, and floating structures moored in the bay for extended periods of time) and dredging are controlled through the permit system established by the McAteer-Petris Act of 1969. The San Francisco BCDC is authorized to issue or deny permits for filling and dredging in the bay (BCDC 1969). The McAteer-Petris Act requires the BCDC to take action on a permit matter within 90 days after notification. The McAteer-Petris Act specifies that fill in the bay be minimized to avoid harmful effects to the fertility of marshes or fish and wildlife resources. Specific habitats that are needed to prevent the extinction of any species or to maintain or increase any species that would provide substantial public benefits should be protected whether in the bay or on the shoreline behind dikes. To the greatest extent feasible, the remaining mudflats and marshes of the bay should be maintained. Filling and diking that eliminates marshes and mudflats should be allowed only for providing substantial public benefit and where there is no reasonable alternative (BCDC 1995).

MOU for Operation of Dredge Ponds. The Navy and USFWS have a memorandum of understanding (MOU) regarding dredge pond maintenance and the continued survival of the Mare Island population of the endangered salt marsh harvest mouse and sensitive bird species (including California clapper rail and California black rail) that sometimes use the dredge ponds. The MOU allows the Navy to continue maintenance of the active dredge ponds, which includes the dredge pond sediment being periodically dried, compacted, and excavated. Active dredge ponds are located on reversionary land and land being transferred to the USFWS.

3.7 WATER RESOURCES

The following section describes existing water resources on Mare Island and the off-island properties, Roosevelt Terrace and the Main Entrance area. The ROI considered for water resources includes the island, off-island properties, and the adjacent water bodies. Water resources include surface water bodies, such as bays, rivers, and ponds, and ground water found in soil or rock formations. They are located throughout Mare Island.

Water resource issues include availability and use of on-site surface water and ground water supplies, flood hazards, surface water and ground water quality, and dredging issues.

3.7.1 Surface Water

Surface water includes bays and estuaries, lakes and ponds, rivers and creeks, and overland precipitation runoff. Surface waters on or around Mare Island include a complex web of freshwater drainageways draining to the saltwater and brackish-water San Francisco Bay estuary. The primary water bodies in the area are the Sacramento-San Joaquin River that flows through Suisun Bay and the Carquinez Strait, and the Napa River that flows through Mare Island Strait into San Pablo Bay. Water quality and salinity levels of the Napa River and the Sacramento-San Joaquin River system vary with seasonal and storm event flows. Discharges into Suisun Bay can vary from less than 10,000 cubic feet per second (cfs) to as much as 600,000 cfs during or following major storms. During high discharge periods, the upper layer of water in San Pablo Bay near Mare Island can become almost completely fresh water. During the summer, when there is little runoff, both Suisun Bay and San Pablo Bay are primarily salt water.

Mare Island receives an average of between 17 and 20 inches of precipitation annually. Most precipitation falls between October 15 and April 15, with minimal precipitation falling during the summer. Resulting runoff from the developed portions of the site is directed to the Mare Island stormwater system and then discharged to the Napa River. (See Section 3.12 for a discussion of this system.) Runoff from the undeveloped portions of the site flows through minor drainages to the surrounding waterways.

Mare Island

Most surface water found on Mare Island itself is a result of ponding and precipitation runoff and from water pumped from dredged material onto the wetlands. Small quantities of surface water are created by on-site springs ponding and by the runoff of domestic and irrigation water used on the island

(primarily on Federal surplus land). There are no intermittent or perennial streams on Mare Island.

Surface water is contained in 2 small reservoirs on surplus land in the southern uplands. The southernmost reservoir, the "saltwater" reservoir, is on the eastern side of the southernmost hill on the island. This reservoir is filled with water pumped from the Mare Island Strait and has been used historically for fire fighting and recreation. The second reservoir is found on the Mare Island Golf Course in a saddle between the 2 hills at the southern end of the island. Mare Island staff believe the pond to be natural; however, historical records indicate that a granite wall was erected in this area to create a reservoir (Vallejo 1994c). Originally, this reservoir may have been a spring fed pond that was subsequently enlarged. Divers in the reservoir have noted a source of cold water, presumably a spring, under the reservoir (Efishoff 1994). The reservoir also is filled by precipitation and irrigation runoff and a small spring at its northern end. There is a second small sulfur spring or seep to the east of this pond between the first green of the golf course and Building A-172 (Vallejo 1994c).

Surface water accumulates on the dredge ponds as a result of dredge operations and direct precipitation onto the ponds. Through 1996, dredge material slurries were pumped from the Mare Island Strait, across surplus land, to the dredge ponds, most of which are on state reversionary land, where sediments were removed from the water by settling. (There are no dredge ponds on surplus property.) The effluent then was sampled to assure that permit requirements were met, and the water then was discharged via weirs into the surrounding tidal marshlands. Although the dredge slurry pumping and disposal system remains on-site, as of late 1996, it was not in use, and the Navy's dredging permit for Mare Island Strait has expired. Although the dredge ponds are not part of surplus land considered in the alternatives, they are addressed here because they are within the project's ROI.

Main Entrance and Roosevelt Terrace

Surface water runoff from the Main Entrance and Roosevelt Terrace runs into the local Vallejo Sanitation and Flood Control District (VSFCD) storm drain system. That system is discussed in Section 3.12.

Surface Water Quality

Surface water runoff from portions of the island can become contaminated through contact with contaminated soils and through contaminants washed off roadways and parking lots. In addition, high-flow cross connects between the stormwater and sanitary sewer systems occasionally can result in sanitary sewage contaminating stormwater runoff, which then is discharged into the

Mare Island Strait or San Pablo Bay. Surface waters surrounding the island also can be contaminated by water discharged from industrial operations.

Historically, the water discharged to the tidal marsh from the dredge ponds on the west side of the island was tested for settleable solids (clarity) and certain metals; no chemical testing has been performed. Settleable solids concentrations were measured daily when there were discharges.

Fish and shellfish populations are declining in San Pablo Bay, with elevated fish tissue levels of bioaccumulating toxins from cumulative pollutant discharges into the bay and upstream river estuary. The state has noted that levels of selenium, mercury, and other metals in San Pablo Bay receiving waters are high, impairing water quality (California Water Resources Control Board 1990). Concentrations of spent abrasives from ship maintenance at Mare Island may be the source of some of the water quality problems affecting San Pablo Bay fisheries. Ship maintenance also may have impacted fish populations in Mare Island Strait, as described in Sections 3.6 and 4.6 (Biological Resources).

3.7.2 Ground Water

Ground water is defined as water occurring in soil or rock formations. Ground water basins are soil or geologic features within which stored ground water is interconnected and functions as a unit.

Mare Island

Mare Island is within the Napa Valley Ground Water Basin, which drains southward towards San Pablo Bay. Ground water elevations in the Napa Basin near Mare Island are at or near sea level. These elevations are affected by seasonal precipitation and, in areas close to tidal waters, by tides.

Three principal water-bearing zones, the shallow, intermediate, and deep zones, have been identified underlying Mare Island and its vicinity. Borings west of Cedar Avenue have encountered all 3 water-bearing zones; borings east of Cedar Avenue have encountered primarily the shallow zone (US Navy 1993a). These formations, their depths, and areas of occurrence are discussed in Section 3.8, Geology and Soils.

The shallow zone is composed of silt and inorganic clay and is in the upper few feet of the dredge materials and in the lower areas of fill. Thicknesses of the shallow ground water zone range from less than 1 foot to over 12 feet below ground surface (bgs). This zone is not contiguous throughout Mare Island. The direction of ground water movement at Mare Island is complex and has resulted in inconsistent past interpretations of ground water flow.

Recent studies indicate that ground water flows generally westward on the western half of the island (primarily state reversionary land), with the exception of the area around the sanitary landfill, the dredge ponds, and the industrial wastewater treatment ponds. In those areas, localized higher ground water levels occur, resulting in lower ground water levels east of the landfill. One explanation for these observations is that localized higher ground water levels may result from water in the dredge ponds and water filtering rapidly through the landfill wastes (US Navy 1993b).

The intermediate water-bearing zone is located within the medium stiff sandy clays of the Younger Bay Mud. Near the sanitary landfill, this water-bearing zone is encountered at depths of 45 to 50 feet bgs. Away from this area, the zone seems to become narrower to the northwest and southeast, where it is up to about 7 feet thick. Underneath this unit is a discontinuous layer of silty clay. In areas where the silty clay is absent, the intermediate water-bearing unit merges with the top of the Older Bay Mud. This occurs, for example, approximately 700 to 800 feet east of the sanitary landfill. Flows in the intermediate water-bearing zone are generally towards the north and northeast (US Navy 1993b).

The deep water-bearing zone is a poorly sorted gravelly sand near the top of the Older Bay Mud. Test wells here indicate that the thickness of this unit ranges from less than 2 feet to over 12 feet. Other data suggest that this layer may exceed 30 feet in thickness under the impoundments north of the sanitary landfill (US Navy 1993a, 1993b). Overall thickness of the zone seems to increase to the north. Plots show both a north-northwest and a generally westerly flow of ground water in this zone (US Navy 1993b).

Ground water in uplands areas flows either within this soil cover or in joints and fractures in the bedrock. The rock itself is relatively impermeable. In some locations, ground water intercepts the ground surface, resulting in springs.

The 2 small springs in the southern uplands portion of the site are possibly fed by seepage from large water storage tanks in that area. However, several springs were noted on the site prior to the construction of the water tanks. This indicates a natural component to the spring flows. No detailed studies or analysis of this water have been made (US Navy 1994f).

Main Entrance and Roosevelt Terrace

No detailed ground water studies have been prepared for the Main Entrance and Roosevelt Terrace. Regional ground water flows and conditions for the off-island sites would be similar to those described for Mare Island.

Ground Water Quality

Ground water samples in low-lying areas of the island contain total dissolved solids in excess of 3,000 milligrams per liter (mg/l), which is the upper limit associated with drinking water supplies in the Bay Area. The brackish surface water bodies surrounding Mare Island (Napa River, Napa Marsh, and San Pablo Bay) are the likely sources of these dissolved solids (US Navy 1994f).

Ground water monitoring has detected localized ground water contamination in low-lying areas of Mare Island. Contaminants include asbestos, petroleum hydrocarbons, heavy metals, and other compounds. Ground water contamination and remediation is discussed in Section 3.13, Hazardous Materials and Waste. No detailed ground water studies have been performed for the off-island areas of the site.

3.7.3 Water Supply and Demand

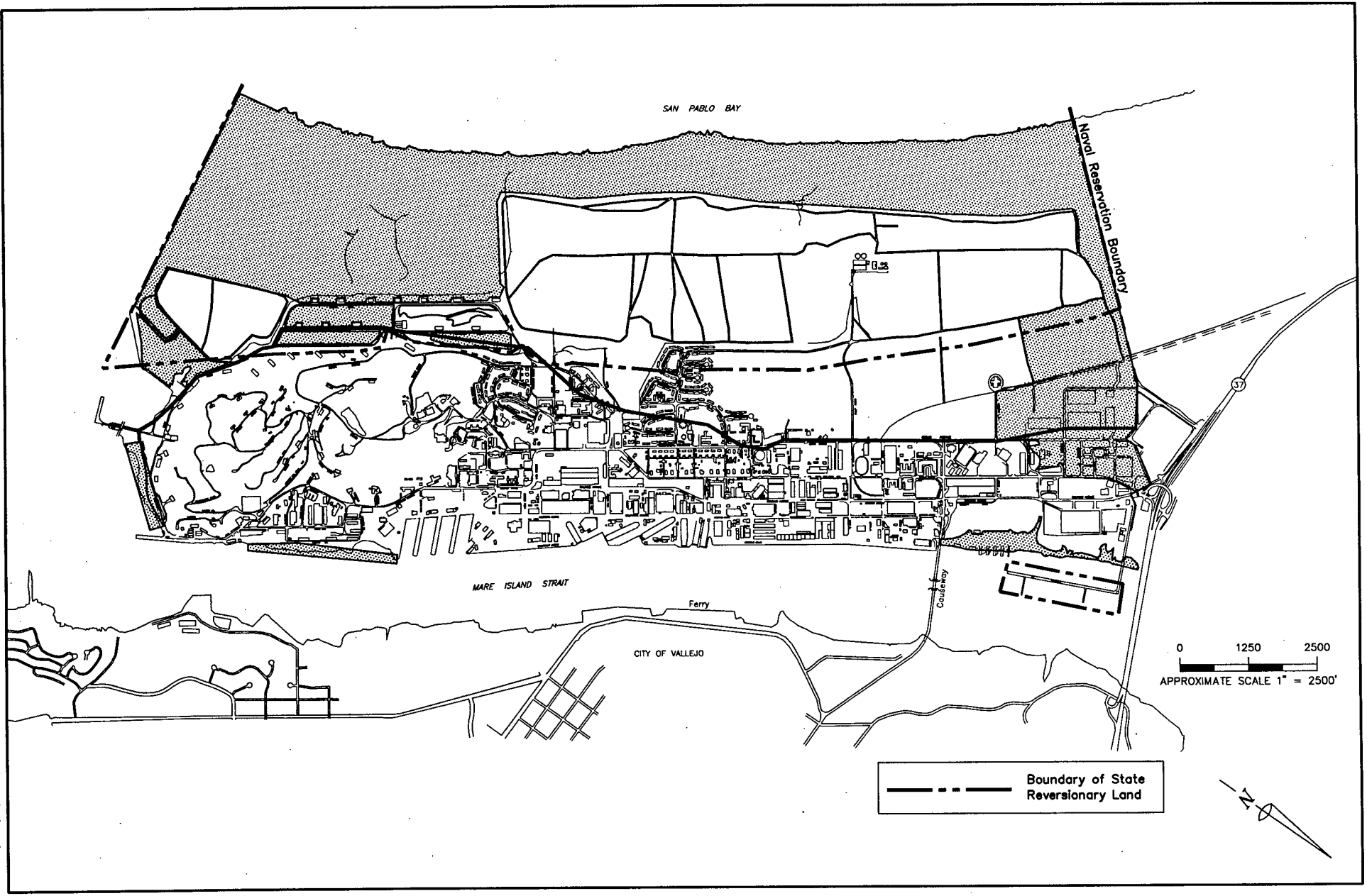
Salt water was used for cooling the Mare Island power plant and for fire suppression on the island. Brackish water from the reservoir east of the golf course is used for irrigation. No fresh water from on-site surface or ground water sources is used for domestic purposes on Mare Island. Domestic water used on the island and in the Main Entrance and Roosevelt Terrace areas is obtained from Vallejo. Supply and demand for this water are discussed in Section 3.12.

3.7.4 Flood Hazards

Flooding

Low-lying portions of Mare Island are subject to flooding in extremely high tides, tsunamis, or extreme flows on the Napa River. A flood inundation study, based on existing data, was conducted for the Mare Island Master Plan (US Navy 1989). This study indicated that areas below 8.8 feet above the mean lower low water level (MLLW) may be subject to inundation during the 100-year flood event (including potential effects of tides, storms, and high river flows). MLLW is a base level that varies locally according to long-term measurements of tidal heights; in the Mare Island area MLLW is approximately 2.6 feet below mean sea level, or MSL. This study did not include potential effects of wave runup, land subsidence, or global sea level rise. Most areas mapped as subject to flooding are on state reversionary lands, but small areas of surplus land are subject to flooding and are shown on Figure 3-15.

The US Army Corps of Engineers (COE) has estimated 10-, 100-, and 500-year high tides at various stations around San Francisco Bay (US Army Corps of



Low-lying areas around the perimeter of Mare Island are subject to 100-year floods while the western half of the island is subject to 200-year tsunami (tidalwave) inundation.

LEGEND:

Limit of Tsunami Inundation (200-year event)

Areas subject to 100-year floods

Source: Vallejo, 1994c

Flooding

Mare Island, California

Figure 3-15

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Engineers 1984). That study indicates that the 10-year high tide in the Mare Island area is 8.3 to 8.4 feet above MLLW, the 100-year high tide is 8.8 to 8.9 feet above MLLW, and the 500-year high tide is 9.1 to 9.2 feet above MLLW. The highest tide of record, on February 13, 1938, was approximately 9.4 feet above MLLW. This does not include effects of high river flows, tsunamis, wave runup, land subsidence, or sea level rise. Wave runup on the order of several feet is not uncommon for storms in the region. These factors would increase the flooding problems in periods of high tides.

Significant on-site flooding occurred as recently as 1983 when a dike broke, and portions of the northern corner of the shipyard were flooded. Up to 6 feet of water inundated the areas around Buildings 617, 621, 627, 751, and 759 (Vallejo 1994c). This area is within the Navy's mapped 100-year flood area.

The Roosevelt Terrace and Main Entrance sites are included in the Federal Emergency Management Agency (FEMA) flood hazard mapping prepared for Vallejo. Both of those sites are outside of the 100-year flood zone, as determined by FEMA.

Tsunamis

Seismic sea waves, or tsunamis, (commonly referred to as "tidal waves") can be generated by strong seismic shaking and motion on the sea floor during major earthquakes in the ocean or in other areas of the Pacific Rim. The 200-year tsunami (0.5 percent chance of occurring in any given year) is estimated to be approximately 20 feet high at the Golden Gate. Wave runup at Mare Island from tsunamis has been estimated at less than 10 percent of the height of the wave at the Golden Gate (Ritter and Dupree 1972), resulting in a wave runup at Mare Island of less than 2 feet (US Navy 1989). The estimated area of inundation in a 200-year tsunami is shown in Figure 3-15. The Roosevelt Terrace and Main Entrance sites are not subject to tsunami runup hazards.

Sea Level Rise and Land Subsidence

A rise in sea level or land subsidence (relative sea level rise) would exacerbate flooding in low-lying areas of Mare Island. Sea level has been rising since the close of the last ice age, and the rise in sea level has accelerated in the past 25 years.

Estimates of sea level rise over the next century range from 1 to 11 feet by 2100. It is anticipated that although the rate of rise in the next 15 years will be gradual and close to historic rates, the rate may accelerate dramatically in subsequent years (San Francisco BCDC 1987). Estimates indicate a rise in sea level of about 1.3 feet in the Mare Island area by 2036 (San Francisco BCDC 1987). The US EPA's projection of sea level rise indicates that by 2006, there is

a 50 percent chance that sea level will rise 6.24 inches by 2050 and another approximately 6 inches by 2075 (US EPA 1995).

Land subsidence is a process of settlement which lowers the land surface and can expose new areas to flood hazards. Subsidence of the land surface could occur as a result of continued compaction or consolidation of young sediments and fill at Mare Island (see Section 3.8, Geology and Soils). Although most of the sediments underlying Mare Island have been subjected to repeated strong seismic shaking in the past and although much of the likely compaction has already occurred, earthquake-induced settlement in areas filled since the last major seismic event at Mare Island in 1898, as well as in other areas where settlement is not yet complete, could still occur.

The area between Benicia and Sonoma Creek has shown a subsidence ranging from .0055 feet/year to no subsidence. Over 100 years, the .0055 feet/year figure would equate to about 6 inches of subsidence. Subsidence at Mare Island may be less than at Benicia.

The combined effects of subsidence and sea level rise would increase the 100-year flood elevations from the current 8.8 feet MLLW to over 10 feet MLLW by 2036. Adding about 2 feet of wave runup results in a potential effective flood elevation of about 12 feet MLLW at bayfront areas of Mare Island. This includes much of the low-lying state reversionary land. Areas facing the Mare Island Strait would have somewhat lower wave runup but would be subject to increased flood levels in the event of high flows from the Napa River. The off-island sites would not be subject to inundation by the projected rise in sea level during the next 50 years.

3.7.5 Dredging

One of the primary purposes of dredging is to open or maintain navigational channels. In the vicinity of Mare Island, maintenance dredging of navigational channels is performed in the Carquinez Strait and Pinole Shoal, in the Mare Island Strait, and in the Napa River as far upstream as Third Street in Napa to maintain shipping channels. Dredging also may have a role in flood control because it can enhance a river's drainage capacity. A project to improve the Napa River for flood control is underway upstream of Mare Island.

The focus of this section is on dredging in the Mare Island Strait, east of Mare Island, since that is where maintenance dredging has historically been performed, specifically for the benefit of Mare Island Naval Shipyard. Two types of maintenance dredging have been performed in the Mare Island Strait. These include maintenance of the so-called Navy Channel and berthfront dredging to maintain access to pier areas. The Navy Channel was maintained

by the COE, while the berthfront dredging was performed by the Navy (Figure 3-16).

The Vallejo Department of Public Works periodically dredges the city's marina, ferry berthing slips, and boat launching ramps. The dredging is performed every 5 to 6 years to a depth of about -10 feet MLLW to accommodate shallow draft vessels. The Vallejo Yacht Club, a private facility, has similar dredging requirements. Although there are several waterfront industries with piers or docks along the east shore of Mare Island Strait, none of them currently perform any dredging. The VSFCD has an outfall onto Mare Island Strait, which may extend about 100 feet from shore at a depth of less than -10 feet MLLW.

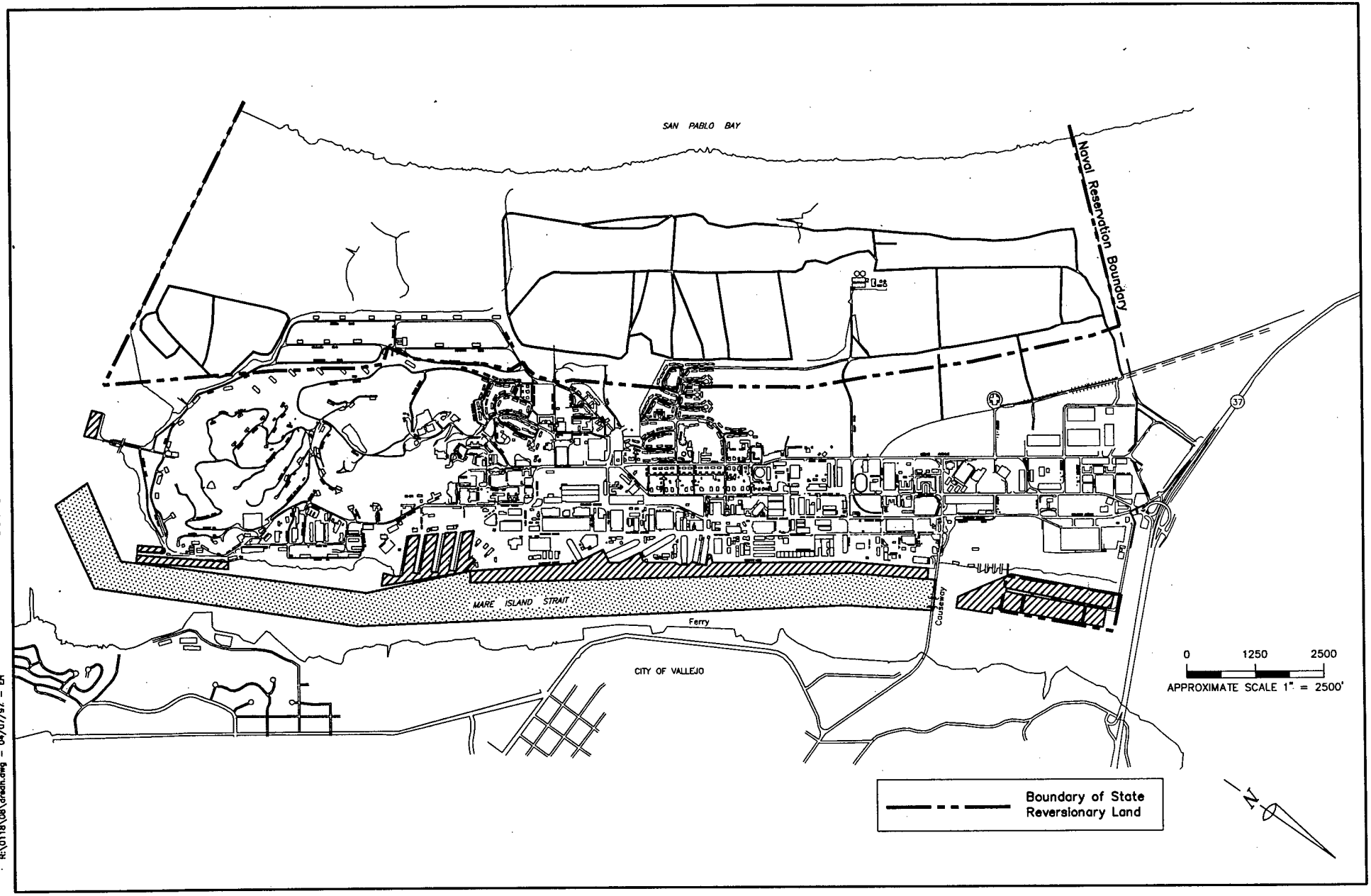
Channel Dredging

The COE contracted with a private company to maintain the Navy Channel, which is superimposed on the broader Federal Channel between Carquinez Strait and the Causeway Bridge. The Navy Channel has historically been dredged to maintain a depth of -36 feet MLLW and a width of about 400 feet, for submarine access to the shipyard. This dredging ceased upon closure of the facility, but Vallejo has requested, and the Corps has agreed, to dredge the channel to -30 feet in 1998. The Federal Channel is approximately 700 feet wide, flaring to 1,000 feet wide at the turning basin and varies in depth from -30 feet to -26 feet MLLW along its reach. It has not been necessary to maintain the full Federally authorized channel, however, because the Navy Channel adequately addressed general shipping needs.

Upstream of the Causeway Bridge, the COE is authorized to maintain the Napa River channel to a depth of -15 feet MLLW, as far as Asylum Slough, and to a depth of -10 feet MLLW from the slough to Third Street in Napa. No general shipping traffic currently using the Mare Island Strait requires greater than the -15 feet MLLW channel that is maintained above the Causeway Bridge.

The shoaling rate in the Mare Island Strait is approximately 4 to 6 feet annually, up to 1 foot per month (Dames & Moore 1987). This is one of the highest rates in the Bay Area. In order to justify maintaining the Federal Channel below the Causeway Bridge in the future, if the Navy Channel were no longer dredged, it would have to be demonstrated that the benefits exceeded the costs for the combined projects.

Only about a fifth of the sediment that accumulates in the Mare Island Strait comes from the Napa River. The remainder originates from the Sacramento/San Joaquin Rivers. Fine-grained sediments that may remain



Dredging is performed in the Mare Island Strait by the Navy and Army Corps of Engineers to open and maintain navigational channels and to aid in flood control.

LEGEND:

Navy Waterfront (dredged by Mare Island Shipyard to a depth of −30 to −39 feet mean lower low water level)

Navy Channel and Public Channel (dredged by U.S. Army Corps of Engineers to a depth of −36 feet mean lower low water level)

Source: Vallejo, 1994c

Dredged Areas

Mare Island, California

Figure 3-16

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suspended in the swift fresh water of the Sacramento River tend to precipitate when they encounter the brackish waters of San Pablo Bay. The change in water chemistry causes sediment particles to cling to each other, or "flocculate," which makes them settle faster. Also, flood tides move the sediment-laden water from the Sacramento River into the relatively quieter water of Mare Island Strait, where the sediment has time to settle. There is general agreement that the Napa River is capable of moving some of the sediment load downstream and maintaining a channel even if no dredging were performed. But uncertainty remains as to what the equilibrium depth of Mare Island Strait would be. If shoaling developed above a depth of -15 feet MLLW, then some level of maintenance dredging would be required in the strait to maintain access to the Napa River.

The Navy channel portion of the Mare Island Strait has been dredged using a hopper dredge. This method generally is used in long open areas and is uneconomical in tight areas or near structures, such as piers, because it involves a relatively large ocean-going vessel trailing a suction pipe. The dredged sediment was pumped from the bottom of the waterway, through the pipe and onto a hopper built into the vessel. Hopper dredges typically are used where aquatic disposal is possible and the dredge sediment can be discharged through the bottom of the hull.

The COE operates an aquatic dredge material disposal site in the Carquinez Strait, adjacent to the south end of Mare Island, called the Carquinez Strait Open Water Disposal Site No. 9, where the material from Mare Island Strait dredging is deposited. Although the capacity of Disposal Site No. 9 is large, it is a policy of the San Francisco Regional Water Quality Control Board (RWQCB), expressed in the Basin Plan, and of BCDC in the Bay Plan, to encourage alternatives to dredge material disposal in the San Francisco Bay estuary.

No permit is required for channel dredging since the COE is the lead permitting agency for all dredging in San Francisco Bay. However, the COE, in its dredging activities, complies with the requirements of other regulatory agencies, such as BCDC, the San Francisco RWQCB, and the USFWS.

Berthfront Dredging

Dredging in an approximately 225-foot wide strip between the Federally authorized channel and the piers alongside Mare Island historically has been performed by the Navy until 1996, using a cutter head suction dredge. Berthfront dredging varied between a depth of -30 and -39 feet MLLW. The Navy performed maintenance dredging around Pier 34, the Coast Guard's pier, to a depth of -30 feet MLLW. This was much deeper than required for the shallow draft (3 to 4 feet) vessels operated by the Coast Guard.

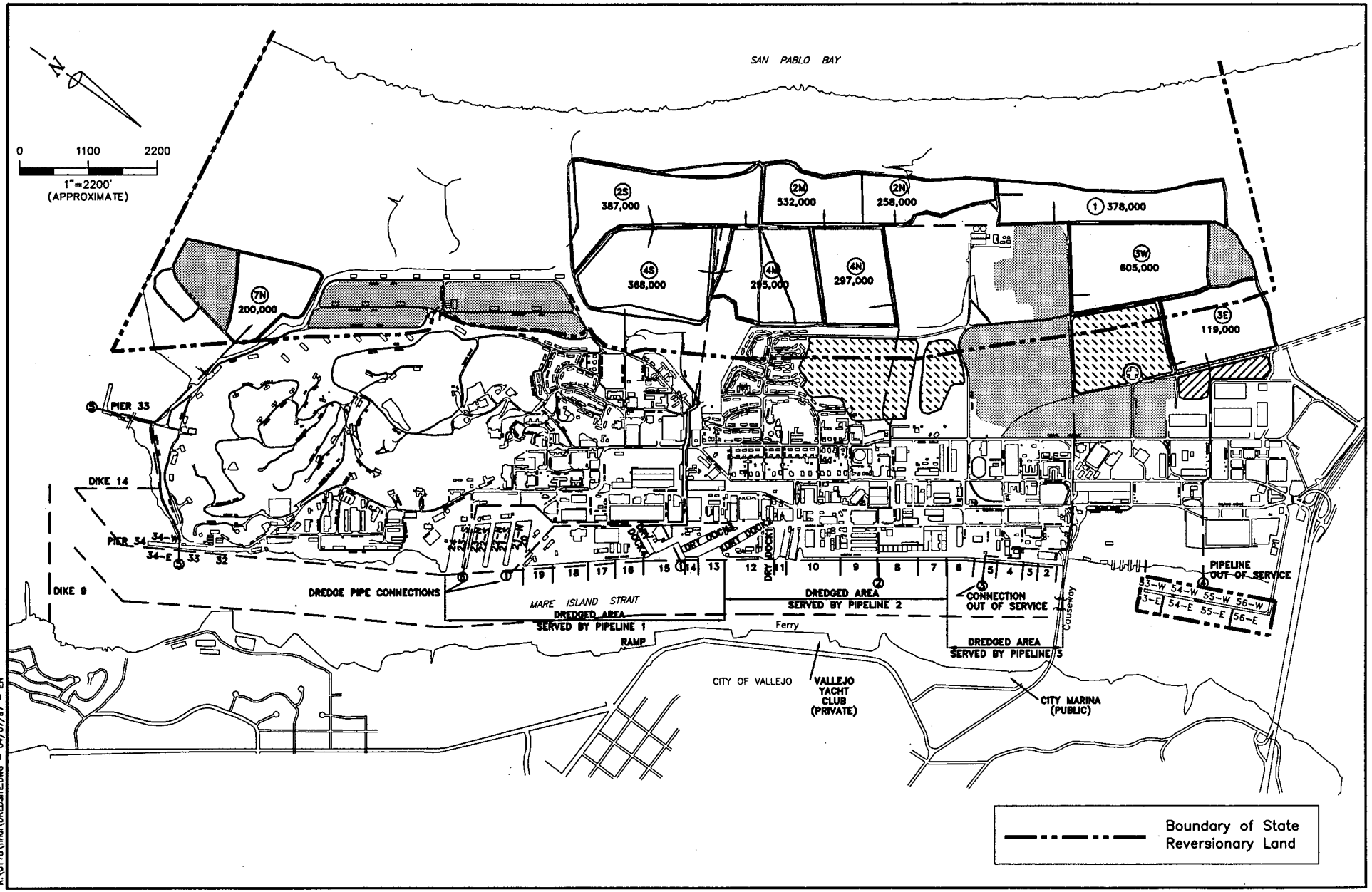
The dredge pumped sediment through a transportable floating pipeline into 1 of 4 operational fixed on shore pipelines. One of the pipelines (No. 4 on Figure 3-17) is not operational. The floating pipeline can be connected to the onshore piping system at 1 of 8 quayside connecting points (currently, the northernmost 2 connecting points are not operational). The berthfront dredging system allowed access to all of the shipyard's berths and piers except those north of Causeway Bridge.

The Navy was required to have a permit from the Corps of Engineers to perform the berthfront dredging and to obtain a Federal consistency determination by BCDC. The Navy obtained an extension of its previous 5-year permit No. 17641E24, but the extension expired on May 1, 1996, and has not been renewed. That permit allowed the Navy to dredge up to 600,000 cubic yards of sediment annually. The amount of material dredged in recent years was 475,000 cubic yards in 1991, 251,000 cubic yards in 1992, 326,000 cubic yards in 1993, and 157,320 cubic yards in 1994 (Young 1994, 1995, 1997).

The dredge material was pumped as a slurry through the onshore pipelines to settling ponds on the western side of Mare Island. The pipelines cross surplus land and empty out in ponds located primarily in state reversionary land (except for most of Pond 3E and certain former dredge ponds located on surplus land). With the exception of Pond 7 and Pipeline No. 5, the pipelines have been engineered so that slurry can be pumped to any of the ponds, through any of the pipelines, as needed. Pipeline No. 5 serves Pond 7 exclusively. Pond 7 was used almost exclusively for dredge material from around the Coast Guard piers at the southeast end of the island. The locations of the dredge ponds are shown on Figure 3-17.

Water was added to the dredged sediments to make the slurry pumpable. The water to solids ratio ranges between about 4:1 and 12:1 (Dames and Moore 1987). At the disposal ponds, the solids settled out and the excess water was discharged to the adjoining marshland. The dried dredge material loses about 40 percent of its volume upon drying (Young 1995). The discharge of the excess water is controlled by weirs and was regulated by a National Pollutant Discharge Elimination System (NPDES) permit issued by the San Francisco RWQCB. The NPDES permit required testing of the discharge for total suspended solids and pH. There was no requirement to test the solid material before or after it was placed in the dredge ponds. The Navy's NPDES permit has expired, and no water other than stormwater is currently discharged from the ponds.

The height to which the levees can be raised ultimately is limited by slope stability and bearing capacity of the underlying sediments (Dames and Moore 1987; Goldman 1969). It has been determined that the levees can be raised an



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Dredge pipe connections feed into dredge lines that carry dredge materials from the dredging areas to the dredge ponds. At current disposal rates, the ponds have enough capacity for nineteen more years of disposal use.

LEGEND:

- Former Dredge Ponds (Wetlands and Endangered Species Habitat)
- Inactive Dredge Ponds – MOU Mitigation Site
- ⑤ Dredge Pipe Connections
- Surface Mounted Pipe
- Underground Pipe
- 4M Active Dredge Ponds
- Additional Dredge Material Disposal Area

Note: Numbers in active dredge ponds indicate remaining capacity in cubic yards as of November 1993.

Source: Vallejo, 1994c; U.S. NOAA, 1992; Dames and Moore, 1987

Dredging Site and Dredge Disposal Ponds

Mare Island, California

Figure 3-17

additional 10 feet in 2 lifts (Phase 1 and 2), allowing the material in the first lift to stabilize for at least 1 year before constructing the second lift (Chaudhary & Associates 1988). In practice, it requires about 5 years to complete each phase because the construction season is limited to the dry period between June and November and because the material used in constructing the levees is borrowed from the dredge ponds (Young 1994).

Between 1989 and 1993 the Navy completed most of Phase I, with the exception of Ponds 1, 3W, 3E, and part of 2S. The levee improvement project was discontinued in 1993. The combined area of the ponds is estimated to be about 510 acres, and their current capacity is estimated to be about 3 million cubic yards (Young 1994). This is enough to contain about 19 years' worth of dredge material at 1994 rates of production, if the levees are not raised. Raising the levees would increase the storage capacity both by increasing the height of the levees and because dried dredge material is used to construct the levees. Assuming that the ponds could store 10 feet of sediments, the total storage capacity of the ponds would be 8.2 million cubic yards after the levees are raised. It should be noted that this capacity could be extended indefinitely by removing dried sediment for use in capping nearby landfills or other beneficial uses.

Currently, Ponds 2M and 3W (on state reversionary land) cannot be used until relatively minor repairs are completed. A portion of the Pond 2M levee failed during the Loma Prieta earthquake in 1991, and a bridge must be installed in Pond 3W to meet requirements of the MOU to provide salt marsh harvest mouse habitat inside the pond (Young 1994).

3.7.6 Plans and Policies

Surface Water Regulations

Regulations relevant to surface water quality at Mare Island include the Regional Water Quality Control Plan (RWQCP) for the San Francisco Bay Region (California RWQCB 1986) and NPDES permit requirements for both stormwater (stormwater pollution prevention programs [SWPPP]) and point source discharges (such as the discharge of cooling water from the shipyard's power plant or discharges of water decanted from dredge material). The San Francisco Bay RWQCB is charged with enforcing Federal point and nonpoint NPDES requirements in the bay region. The COE regulates disposal of dredged materials, including those dredged from the Navy waterfront and disposed of on the west side of the island. All of these plans and policies would apply under state, Federal, or local land ownership and jurisdiction of properties at Mare Island. In addition, Vallejo has enacted the Flood Damage Protection Ordinance (FDPO) as part of its municipal code (Vallejo 1992b), which would be applicable to potentially flood prone eastern and southern

margins of the island upon its conveyance to Vallejo. This ordinance would apply only to lands under the city's jurisdiction.

The RWQCB identifies beneficial uses and water quality objectives for various parts of the bay region, including Carquinez Strait, San Pablo Bay, and the Napa River/Mare Island Channel. Beneficial uses identified for the Napa River and San Pablo Bays, adjacent to the site, include municipal, agricultural, recreational, and navigational. Other recognized beneficial uses include providing habitat for wildlife and endangered species and areas for fish migration and spawning.

Applicants would be required to file an SWPPP in compliance with the statewide general permits for industrial or construction stormwater discharges from the site. An SWPPP would be required to include plans for construction and post-construction stormwater management programs aimed at reducing nonpoint source pollution. Currently, the enforcement emphasis on these plans focuses on construction stormwater management or sediment control; however, post-construction controls are likely to become more prevalent in response to these regulations.

NPDES requirements for point source pollutants include permitting and waste discharge regulations for municipal, industrial, and institutional dischargers. Discharges from the site's dredge disposal ponds currently have an NPDES permit. In addition, water drawn from and discharged to Mare Island Straits for noncontact steam plant cooling and dry dock flooding are subject to and covered by NPDES waste discharge requirement permits.

Ground Water Regulations

The RWQCB has regulatory responsibility for ground water quality standards and enforcement. The RWQCP for the San Francisco Bay Region (California RWQCB 1986) and the Ground Water Basin Plan Amendments (1986 to 1992) designate Mare Island as being within the Napa Valley Ground Water Basin. Ground water underlying the site is considered potentially suitable for municipal or domestic consumption under the RWQCP. However, actual ground water underlying the site is considered to be of poor quality (US Navy 1989; IT Corp. 1990). Uses that generate discharges that can affect ground water quality are subject to regulation by the RWQCB (Waste Discharge Requirements). Any Federal, state, and local uses generating discharges would be subject to RWQCB regulation.

Flooding Regulations

FEMA has developed flood insurance rate maps (FIRMs) for most urban areas in the nation; these maps indicate the areas subject to 100- and 500-year floods

and can be used to evaluate flood hazards for specific properties and to provide data for flood insurance rates. FIRMs generally are not prepared for Federal lands, and no such study has been prepared for Mare Island. (The off-island portions of the base have been mapped and are outside of mapped flood zones.) Upon conversion of the shipyard from Federal ownership to city or state jurisdiction, FIRM maps may be prepared for Mare Island. FEMA has expressed interest in conducting a flood insurance study for the area and would do so at the request of the community (Vallejo 1994c). The resulting FIRMs would be available 2 to 3 years after FEMA begins the study. These FIRMs would formally identify flood-prone areas of the island and would set forth specific flood elevations for use in establishing flood insurance rates and for use in land use planning. FEMA requirements would apply to both Federal surplus and state reversionary land at Mare Island.

The city's FDPO requires flood-proofing of any new structures or structures undergoing substantial improvement that are located in mapped flood areas. These improvements are subject to review and approval by the city's Department of Public Works. This ordinance would apply only to lands under city jurisdiction. In addition, Executive Order 11988, Flood Plain Management, 42 Fed. Reg. 26951 (1977), requires identifying 100-year floodplains and reviewing land use and facilities site planning to ensure that they are fully compatible. To reduce the risk of flood loss, projects sited in floodplains must be undertaken in compliance with the standards and criteria and must be consistent with the intent of the National Flood Insurance Program. This Federal program would apply to lands under state, Federal, or local jurisdiction.

Dredging Regulations

The COE is the lead permitting agency for all dredging in San Francisco Bay. This authority is provided under Section 10 of the Rivers and Harbors Act of 1899, 33 U.S.C. §403, which prohibits obstructing or altering navigable waters of the United States without a permit from the COE. The formal issuance of a permit for dredging of the navigational channels by the COE or its contractors is not required since the COE is the lead permitting agency.

Other laws apply to dredging and dredge material disposal, and the agencies responsible for implementing them act in an advisory role to the COE during its review of dredging project requests and permit applications. Federal agencies involved in dredging issues include the USFWS, which is responsible for protecting the habitats of threatened and endangered species, and the National Marine Fisheries Service, which is responsible for protecting marine fisheries that may be impacted by dredging or dredge disposal. Among the Federal laws affecting dredging are the National Environmental Policy Act, the Fish and Wildlife Coordination Act, the National Historic Preservation Act,

and the Federal Endangered Species Act. Among the state agencies concerned with dredging issues are the San Francisco RWQCB, the BCDC, the MTC, and the State Lands Commission.

Berthfront dredging was conducted under COE permit No. 17641E24 issued to Western Division, Naval Facilities Engineering Command on May 12, 1989. The 5-year permit was extended until May 1, 1996, and has since expired. The COE does not require that the berthfront dredge sediment be tested because it is disposed of upland on the Navy's land. Although a dredging permit is technically transferable to another party for the same purpose, it remains to be determined whether or not berthfront dredging for a nonmilitary purpose would be considered a change in purpose requiring issuance of a new permit.

Dredge material disposal is regulated primarily by the COE and the RWQCB. Section 404 of the Clean Water Act, 33 U.S.C. §1344, prohibits discharging dredged or fill materials into waters of the United States without a permit from the COE. The COE allows disposing dredge material at the Carquinez Strait Open Water Disposal Site No. 9, but the amount of dredged material that can be discharged is subject to a 2 million cubic yard cap set by the San Francisco Bay RWQCB in the Basin Plan. In addition, it is the policy of both BCDC and the San Francisco RWQCB to encourage alternatives to disposal of dredge material in the San Francisco Bay estuary (Bay Plan, Dredging Policies No. 2, 4, and 5; Basin Plan Resolution A9-130, 1991).

Berthfront dredging produces material with a high water content. The disposal ponds are designed to contain the sediments, but the excess water is discharged to the surrounding marsh. This discharge is regulated by Order No. 91-127, corresponding to NPDES permit number CA-00290-50, issued by the San Francisco RWQCB. The NPDES order was adopted and the permit was issued on September 18, 1991, and expired on September 1996. The permit required only that the effluent be tested daily for total suspended solids and pH. This is consistent with testing requirements at other dredge ponds under the San Francisco RWQCB's jurisdiction. The relatively minimal effluent testing requirements imposed by the San Francisco RWQCB apparently were developed based on an assumption that sediment from dredging sites must be tested and must meet toxicity limits set by the COE (Casorca 1994). However, as mentioned above, the shipyard was not required by the COE to perform any sediment testing. The shipyard is in compliance with the requirements of the NPDES permit (US Navy 1994c).

3.8 GEOLOGY AND SOILS

The following section describes the principal geologic formations found on Mare Island and the off-island properties. It addressees seismicity, liquefaction potential, and slope stability since they are geologic hazards that affect development location and feasibility. The subsection on soils and sediments pertains to near-surface deposits that support vegetation and wildlife habitat most frequently in contact with activities, such as dredging and construction activities. The ROI considered for soils and geologic resources includes the island and off-island properties, the underlying geologic formations, and regional active faults.

3.8.1 Regional and Site Geology

Physiography

Mare Island is within the Coast Range Geomorphic Province of California. The surrounding area is characterized by hilly to steep uplands and level or gently sloping alluvial plains and tidal marshes rising from sea level along the Napa River and Suisun Bay to an elevation of about 1,000 feet MSL (Bates 1977).

Prior to its development as a naval shipyard, Mare Island consisted of 956 acres of uplands and 310 acres of wetlands (Vallejo 1993b). Bayward of the bluffs and north of the central area, much of the present land was below sea level or contained tidal marsh (Nichols and Wright 1971). Since acquiring the island in 1853, the Navy has added 549 acres of uplands and approximately 2,785 acres of submerged and wetlands. The original uplands are on surplus land, while wetlands and tidal mudflats are located primarily on state reversionary land.

Regional Geology

In the Bay Area, movement along the San Andreas Fault has brought granitic rocks of the Salinian block northward along the west side of the fault into juxtaposition with the assembly of Franciscan chert, sandstone, and volcanic rocks that underlie the Coast Ranges east of the fault. East of the Hayward Fault, the Franciscan rocks are overlain by the Coast Range ophiolite (ultrabasic oceanic crust scraped onto the continental plate during subduction) and continental sedimentary rocks of the Great Valley sequence (Irwin 1990). Great Valley sequence rocks generally are not found west of the Hayward Fault.

Overlying the Great Valley sequence are consolidated Tertiary sedimentary rocks (less than 65 million years before present [b.p.]) and unconsolidated

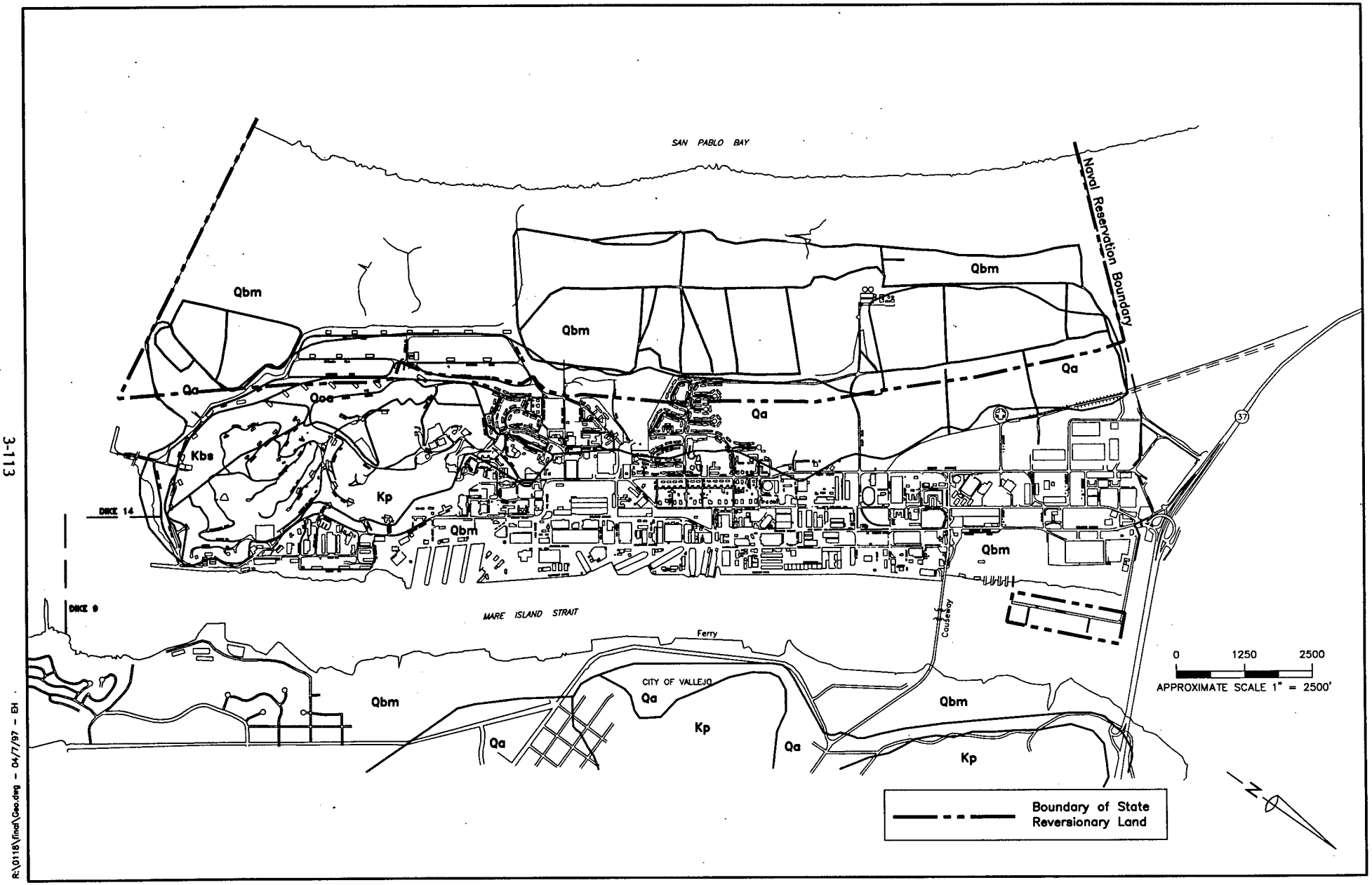
Quaternary sediments (less than 2 million years b.p.). Exposures of Tertiary rocks are rare in Solano County west of the Green Valley Fault (Sims et al. 1973). Tertiary rocks are exposed west of the Franklin Fault in Alameda County, between the Southampton and Concord Faults in Contra Costa County, and just north of Vallejo in Napa County (Sims et al. 1973). Regional faults are described further in Section 3.8.2.

Site Geology

Figure 3-18 shows the geology of Mare Island. Bedrock crops out only in the hill area at the southern end of Mare Island. Sims et al. (1973) mapped this area as an unnamed mostly sandstone formation containing mudstone, shale, and conglomerate, belonging to the Great Valley sequence. Dibblee (1980, 1981) further identified these rocks as belonging to the Panoche formation, comprising a shale unit with thin sandstone beds, overlain along the southwest slopes by an arkosic sandstone unit with minor shale. The remaining area of the island has been mapped as alluvium, Bay Mud, or engineered fill. Dibblee differentiates an older alluvium unit west of the golf course and extending into the draw containing the golf course. Surficial deposits in most of the low-lying areas of the island are identified in the soil survey of Solano County (Bates 1977) as either engineered fill or Valdez Silty Clay Loam. The dredge material deposits appear to be underlain by Reyes Silty Clay, the deltaic marshland deposits that cover much of the adjacent Island No. 1.

The deposits overlying bedrock in San Francisco Bay include Older Bay Mud and Younger Bay Mud. Older Bay Mud is a silty clay deposited on the bedrock surface and Younger Bay Mud was deposited on an erosional surface in the Older Bay Mud. The Younger Bay Mud is characterized by abundant broken shell fragments and desiccation cracks. The thickness of the Younger Bay Mud around the margins of Mare Island has been estimated by Goldman (1969) to be up to 80 feet or more beneath the western edge of Mare Island, with depths to the bottom of the Younger Bay Mud reaching a maximum in the Carquinez Strait of about 100 feet. These estimates are based on sparse data, and data are lacking for extending the estimates into San Pablo Bay (Goldman 1969).

Installation restoration site investigations at Mare Island have generated some shallow subsurface geologic data. Bedrock was identified approximately 60 feet below the ground surface in the region west and northwest of Cedar Avenue (IT 1992). Sandstone and siltstone, presumably correlating with Great Valley sequence rocks, were encountered at the IR-01 Facility Landfill Site on the west side of the shipyard. Based on site investigation data, the Older Bay Mud occurs up to 2 feet below the land



Mare Island is part of the Coast Range Geomorphic Province of California. Since acquiring the island in 1853, the Navy has added 674 acres of uplands, 610 acres of wetlands, 510 acres of dredge sediment ponds, and 2,400 acres of tidal mudflats.

LEGEND:

Qbm	Bay Mud	Kps	Arkosic Sandstone, Buff, Minor Shale
Qa	Alluvium	Kp	Micaceous Shale, Minor Thin Sandstone Beds
Qoa	Older Alluvium		

Source: Adapted from U.S. Navy, 1989; Dibblee, 1980, 1981; Nichols and Wright, 1971

Geology

Mare Island, California

Figure 3-18

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surface at Mare Island and consists of sand, silt, and silty clay (US Navy 1994f). In some areas, such as near the northeastern edge of the sanitary landfill (on state reversionary land), the Older Bay Mud is overlain by up to 10 feet of fine- to medium-grained sand.

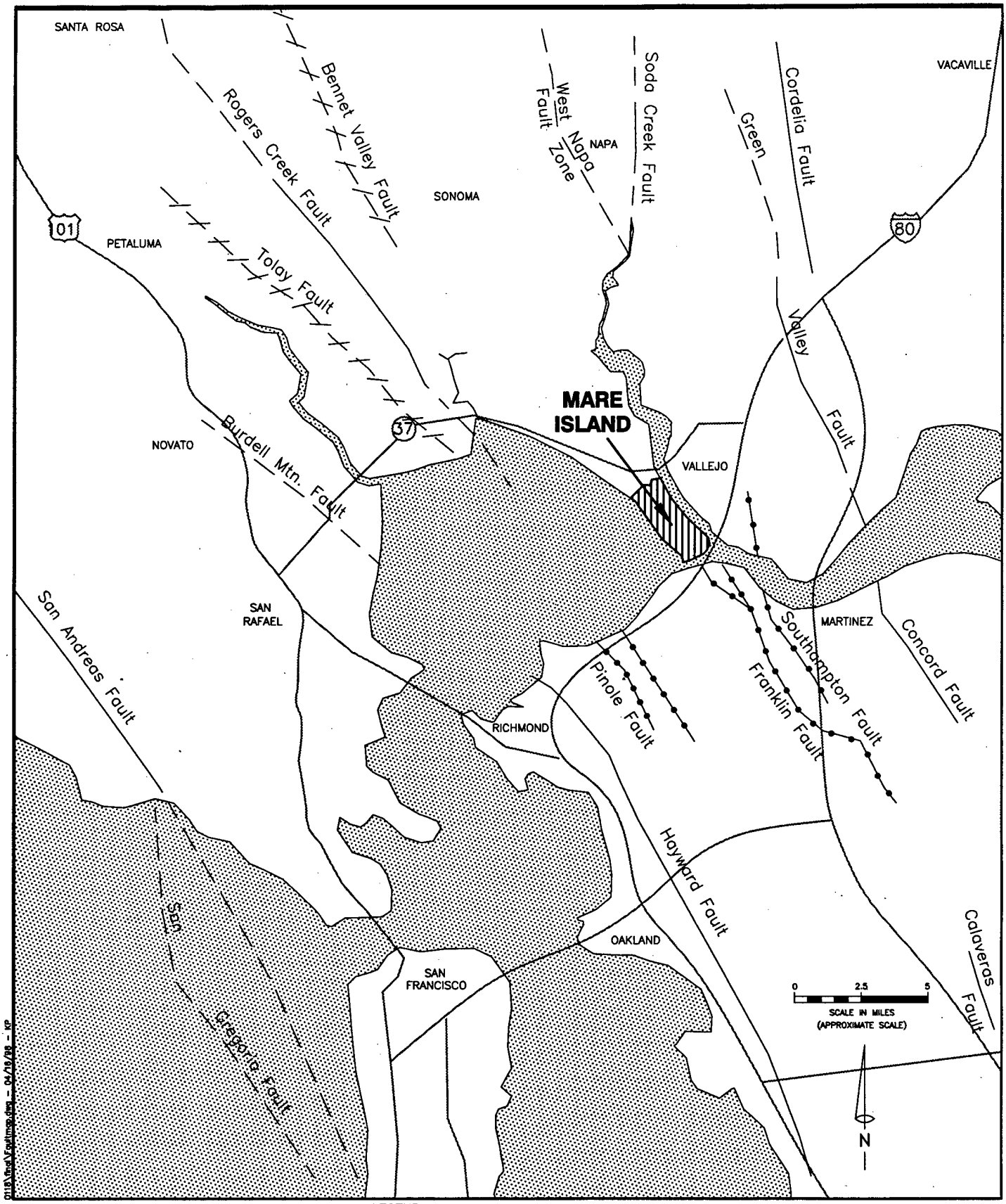
Dredge material on the island is largely contained within diked ponds along the west side. Most of these ponds are on state reversionary land. Dredge material is similar to Younger Bay Mud and it is composed of soft clayey silt and clay and contains abundant shell fragments, wood and plant material, glass shards, and petroleum wastes. The artificial fill materials used on Mare Island include a mixture of sand, gravel, and clayey materials containing concrete fragments, asphalt, metal objects, and other solid wastes. Typically, the artificial fill consists of an upper and lower layer, separated by a layer of organic debris.

3.8.2 Seismicity

Mare Island lies within the San Andreas Fault system. This system is approximately 44 miles wide in the San Francisco Bay Area (Wallace 1990). The principal active faults, on which there is evidence of displacement during Holocene time (the last 11,000 years), include the San Andreas, San Gregorio, Hayward, Rogers Creek, West Napa, Calaveras, Concord, and Green Valley Faults (Bortugno 1982). These faults are shown on Figure 3.8.2. A fault study (URS/Blume 1985) concluded there is no evidence of Holocene faulting in the immediate vicinity of Mare Island.

Some faults located nearer to Mare Island have been identified in the past as potentially active. These include the Pinole Fault, the Franklin Fault, and the Southampton Fault. No evidence of activity within the last 2 million years has been reported for these faults. The locations of these inactive faults also are shown on Figure 3-19.

The Franklin Fault has been mapped as far north as Selby, on the shore across the Carquinez Strait from Mare Island (Wagner and Bortugno 1982). The Franklin Fault is thought to be inactive in Contra Costa County, based partly on evidence from trenching at the US Bureau of Reclamation's Martinez dam site (ESA 1983). On some older geologic maps it has been shown as an extension of the (active) Calaveras Fault. Although it has been hypothesized that the Franklin Fault may extend across the Carquinez Strait (Leighton and Associates 1975; Kahle and Goldman 1966; Weaver 1949), no direct evidence of the fault north of Selby has been reported (Hart 1994; Brocher and Pope 1994; McCarthy 1994). Earthquake magnitude (expressed using the Richter scale) refers to the amount of energy released at the origin of an earthquake within the earth's crust. Each integer increase in



Damage on Mare Island from the 1989 Luma Prieta earthquake was slight. However, many of the structures on Mare Island are not designed to meet current seismic standards.

LEGEND:

- Active Fault. Fault has evidence of surface displacement within the last 11,000 years.
- Active Fault concealed.
- Potentially Active Fault. Fault has evidence of surface displacement within the last 2 million years.
- Potentially Active Fault concealed.
- Inactive Fault (no evidence of displacement within the last 2 million years)

Source: City of Vallejo, 1983; Bortugno, 1987

Regional Faults

San Francisco Bay Area

Figure 3-19

magnitude represents a 10-fold increase in energy. Magnitude is calculated based on measurements from seismographs. The potential magnitude of an earthquake is thought to increase with the length of the fault. Therefore, the largest earthquakes are expected to occur on long faults such as the San Andreas, Hayward, and Rogers Creek Faults. Incorporating data from the Loma Prieta earthquake of October 17, 1989, the Working Group on California Earthquake Probabilities (WGCEP) estimates a 67 percent probability of 1 or more large earthquakes (magnitude 7.0 or greater) on the San Andreas, Hayward, or Rogers Creek Faults during the next 30 years (WGCEP 1990). Since other active faults were not assessed, the 67 percent probability is considered to be a minimum probability.

Maximum credible earthquakes (the largest event likely to occur on an active fault for a given recurrence interval) on the San Andreas and Hayward Faults, with recurrence intervals of 200 to 300 years, have been estimated to be 8.5 and 7.1 on the Richter Scale, respectively (Vallejo 1975a). Estimates of maximum credible earthquake magnitudes vary depending on the methods used, but most estimates are in this general range. For example, Youngs et al. (1992) estimated maximum earthquake magnitudes for the San Andreas, Hayward, and Rogers Creek Faults at 7.8 to 8.0, 6.7 to 7.5, and 6.8 to 7.3, respectively.

Earthquake intensity is an expression of the amount of ground shaking during an earthquake. The Mercalli intensity scale is based on observations such as the degree of damage to structures. Intensity depends on factors such as the distance from the origin of the earthquake and the nature of the geologic materials at the location where the earthquake is felt. Generally, bedrock shakes the least, and loose saturated materials shake more violently. The loose materials tend to amplify the seismic waves that travel through the earth's crust. Borcherdt and Glassmayer (1994) estimated that ground acceleration of Bay Mud and fill materials near San Francisco Bay average about 3 times larger than bedrock acceleration at the same location.

Damage to a structure depends not only on the intensity and duration of an earthquake, but also on how the structure is built and the direction of travel of seismic waves relative to the structure's orientation. The proximity of Mare Island to major earthquake faults and the fact that a large portion of the island is underlain by Bay Mud and fill materials, places Mare Island among the areas in the Bay Area that are expected to experience the most intense ground shaking in response to large earthquakes on the San Andreas, Hayward, or other major regional faults (Borcherdt et al. 1975).

Previous earthquakes have differed greatly in the amount of damage they caused on Mare Island and illustrate the effects of distance from the origin of the earthquake. An earthquake in March 1898 caused considerable damage

on Mare Island, reportedly damaging nearly every building. Based on a review of written accounts of the damage, Toppozada et al. (1992) estimated the magnitude of the earthquake at 6.5 to 6.8 and suggested that the probable epicenter was near the intersection of the Rogers Creek Fault and the north shore of San Pablo Bay, less than 10 miles from Mare Island. (By comparison, the maximum earthquake expected on the Hayward or Rogers Creek Faults is about magnitude 7.5)

The damage on Mare Island caused by the 1906 San Francisco earthquake (estimated Richter magnitude 8.3) was reported to be much less severe than that of the 1898 earthquake. None of the government buildings were "wrecked," although several new buildings built on "made ground" near the waterfront were seriously damaged (Lawson 1908). The epicenter of the 1906 earthquake was near San Francisco, about 25 miles away. Damage on Mare Island resulting from the 1989 Loma Prieta earthquake (Richter magnitude 7.1) was reported to be slight. The epicenter of the Loma Prieta earthquake was about 80 miles south of Mare Island.

Many of the structures on Mare Island are not designed to meet current seismic standards and have undergone only minimal modification to limit earthquake damage. Some of these structures are located on fill materials over Bay Mud sediments, in areas vulnerable to liquefaction and seismic wave amplification. Previous studies of 72 existing industrial structures suggested that nearly 90 percent of the structures would incur at least 50 percent loss in the maximum credible earthquake, one having a ground acceleration of 0.27 times the acceleration of gravity (g) (URS/Blume & Associates 1982). The cost to retrofit 27 industrial facilities to withstand the anticipated ground shaking was estimated at over $7 million (URS/Blume & Associates 1985).

3.8.3 Soils

Three basic natural soil types, or soil associations that developed in response to different conditions of slope, drainage, and parent material, are found on Mare Island. These soil types include the Reyes-Tamba, the Dibble-Los Osos, and the Altamont-Diablo Associations (Bates 1977). In addition, much of Mare Island consists of fill, including dredged material. The basic soil associations may be further subdivided into mappable units and these are shown on Figure 3-20. The general characteristics of the soil associations are described below.

Soils of the Reyes-Tamba association are found on state reversionary land at the north end of Mare Island and shoreline areas and throughout the Napa River delta north of Mare Island. These soils are developed on nearly level poorly drained salt marshes near sea level and are formed in alluvium from

mixed sources or in dredged materials. They range from silty clay loams to heavy clays and tend to be saline unless drained. On Mare Island, only the Reyes Silty Clay has been mapped, and it generally occurs along the western and northern margins of the island.

Soils on top of the hilly southern portion of Mare Island belong in general to the Dibble-Los Osos Association. These include well-drained loams and clay loams formed from sandstone on 9 to 30 percent slopes. The soil profile is generally thin, ranging from 20 to 40 inches (Bates 1977). On Mare Island, this association includes the Dibble-Los Osos Loam, 9 to 30 percent slopes, and the Millsholm Loam, 15 to 30 percent slopes. On the Vallejo shore, Roosevelt Terrace is underlain by Dibble-Los Osos Clay Loam, 9 to 30 percent slopes, and the Main Gate area is underlain by Dibble-Los Osos Clay Loam, 2 to 9 percent slopes.

On Mare Island, at intermediate elevations, the native soil belongs to the Altamont-Diablo Association. These are moderately deep clayey soils formed in weakly consolidated sediments at elevations between 25 and 500 feet. Some of these soils typically contain a calcareous clay subsoil to a depth of 40 to 60 inches. Large cracks tend to form in the surface and extend downward when these soils dry. On Mare Island, this association includes Altamont Clay, 9 to 30 percent slopes, and Diablo-Ayar Clay, 2 to 9 percent slopes.

Large areas of Mare Island have been filled either with dredge material or with engineered fill. Engineered fill, or "made land," is found primarily along the waterfront and in low-lying areas on the east side of Mare Island but also on the western tip of Farragut Village. Most of the developed areas are underlain by made land, consisting largely of rubble and quarried materials. The soil matrix ranges from sandy loam to clay. The fill material is typically well-drained but rests on poorly drained tidal marsh sediments, usually in areas outside the line of historic uplands shown on Figure 3-20. (Made land inside the line of historic uplands is likely to be underlain by soils of the Altamont-Diablo Association). The engineering properties of the fill vary.

Areas filled primarily with dredge materials have been mapped as Valdez Silty Clay Loam. This soil type covers most of the western half of Mare Island.

3.8.4 Liquefaction Potential

Liquefaction is defined as "the sudden loss of strength of a saturated cohesionless soil resulting from high water pressure between soil grains produced by intense ground shaking. This loss of strength leads to a 'quick

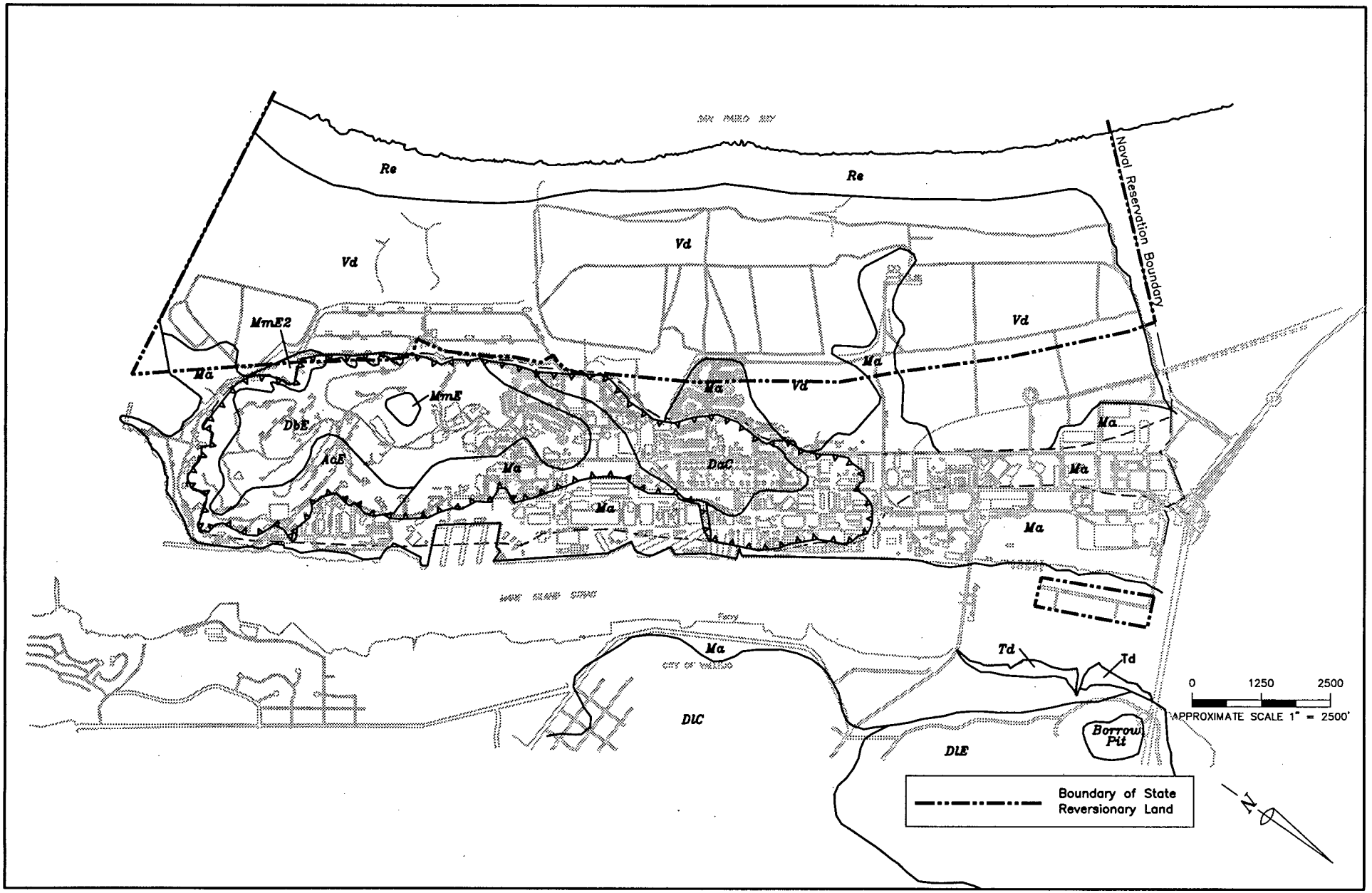
sand' condition in which objects can either sink or float depending on their density." All areas outside the line of historic uplands, shown on Figure 3-20, are suspected of being underlain by Younger Bay Mud, which may have a potential for liquefaction in the presence of strong ground shaking. Most of this area is underlain by made land or Valdez Silty Clay Loam and is expected to be saturated at shallow depth.

3.8.5 Slope Stability

Slope stability is related to a combination of factors including rainfall, geology, steepness of slope, slope orientation, vegetation cover, seismicity, and development. Slope stability concerns include catastrophic slope failure from landslides, debris flows, and debris avalanches, as well as gradual processes, such as creep, earthflow, or erosion. Catastrophic slope failure in susceptible areas may be triggered by seismic events, rainfall, undercutting of slopes by construction activities, and overloading of unstable deposits.

The State of California has prepared maps of landslide hazards in the Benicia-Vallejo area (Bortugno 1987), including Mare Island, showing existing landslide deposits, areas of relative landslide susceptibility, and areas of relative susceptibility to debris flows.

The area representing the greatest hazard of both landslides and debris flows is the area of steep side slopes surrounding the hilly area at the southern end of Mare Island. Three existing earthflow debris sites were identified by Bortugno (1987) on the sideslopes of the southernmost hill on Mare Island. These were described as relatively shallow deposits of a type that commonly move at a rate too slow to observe except over long periods. In terms of landslide susceptibility, most of the hilly area containing exposures of Great Valley sequence rocks have at least marginal potential for landslides. Not surprisingly, areas where there are earthflow deposits have been identified as the most susceptible to landslides. The remaining sideslopes of the southernmost hill on Mare Island are identified as being generally susceptible to landsliding because they are close to their stability limits. Debris flows present a somewhat different hazard from that posed by landslides, in that debris flows typically involve slope failure over a wider area, with greater potential to inundate downslope regions. The sideslopes of the Great Valley sequence deposits in the hilly area and some of the downslope regions have been identified as marginally susceptible to debris flows.



Much of Mare Island outside of the historic uplands consists of man-made fill, including dredged material, and may have the potential for liquefaction during an earthquake.

LEGEND:

Altamont-Diablo Association:

- AcE — Altamont Clay, 9-30% Slopes
- DaC — Diablo-Ayar Clay, 2-9% Slopes

Dibble-Los Osos Association:

- DlE — Dibble-Los Osos Clay Loams, 9-30% Slopes
- DbE — Dibble-Los Osos Loams, 9-30% Slopes
- DlC — Dibble-Los Osos Clay Loams, 2-9% Slopes
- MmE — Millsholm Loam, 15-30% Slopes

Reyes-Tamba Association:

- Re — Reyes Silty Clay
- Td — Tidal Marsh

Mare Island Dredge Sediments:

- Ma — Made Land (Engineered Fill)
- Vd — Valdez Silty Clay Loam, Moist

Approximate Historic Shoreline

Line of Historic Uplands (1859)

Source: Bates, 1977

Soils

Mare Island, California

Figure 3-20

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Rapid erosion is associated with soft or unstable deposits on steep slopes or in areas with abundant surface water runoff. The Natural Resources Management Plan for Mare Island (Wagoner 1989) identified 6 erosion problem areas, shown on Figure 3-21. All but one of the areas are located on the west side of Mare Island. Since these areas may be associated with low slope stability; they are included on Figure 3-21, and the problems and recommendations identified in the Natural Resources Management Plan are summarized below.

(E1) The east-facing cut slope of the borrow pit was described as nearly vertical and severely eroded. The plan recommended terracing and revegetation to improve the stability of the slope.

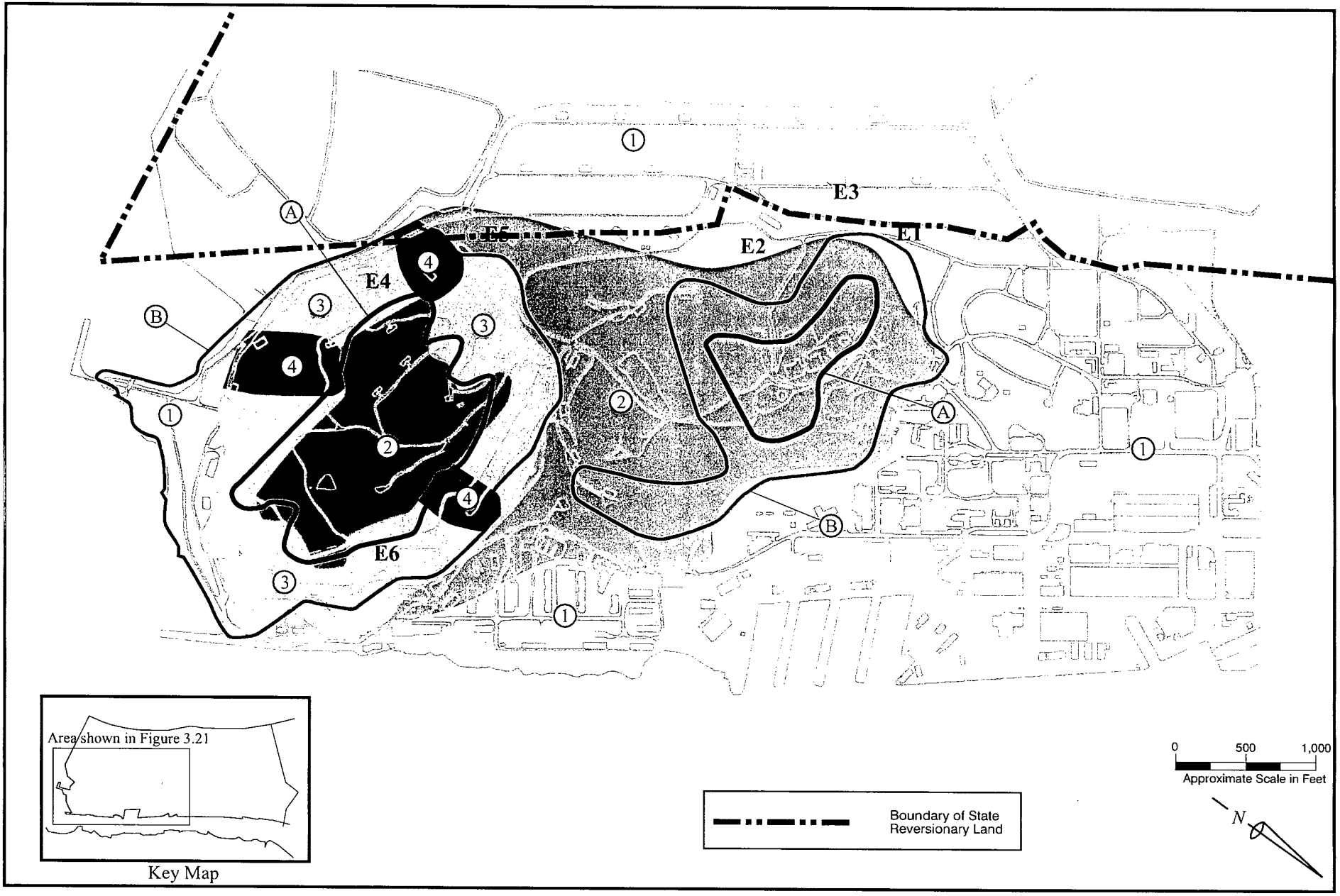
(E2) The area behind Building A-172 was identified as an active soil creep area, which was saturated and eroded as a result of drainage from the golf course. A spring or seep was identified in the exposed slope. The plan recommended that leaks in the golf course irrigation system be repaired and that a retaining wall be constructed at the toe end of the slope to protect Building A-172.

(E3) Eroded slopes were identified along the bluff area approximately between Building A-172 and Building 980. Pipes intended for drainage of stormwater from the upper slope were in poor condition. The plan recommended study of the stormwater flow pattern, repair and modification of the drainage system, and revegetation of the slopes.

(E4) The upper cut slope of a former borrow site adjacent to Building A-147 was identified as unstable and under active erosion. The plan recommended that the erosion be addressed by regarding the slope, redirecting stormwater drainage, and revegetating the area.

(E5) An area of gully erosion was identified along a former golf course access road adjacent o Building A-149. The problem was traced to an undersized culvert, and the plan recommended that the culvert be redesigned and repaired.

(E6) Gully erosion was identified in the vicinity of the eastern horse stable. The problem was traced to improperly maintained drainage structures, and the plan recommended that the drainage system be improved.



3-122

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The area representing the greatest hazard of both landslides and debris flows is the area of steep side slopes surrounding the hilly area at the southern end of Mare Island.

Source: Wagoner, 1989; Bortugno, 1987

LEGEND:

Relative Debris Flow Susceptibility

- (A) Least Susceptible
- (B) Moderately Susceptible

E# Areas with previous erosion related problems

Relative Landslide Susceptibility

- (1) Least Susceptible
- (2) Marginally Susceptible
- (3) Generally Susceptible
- (4) Most Susceptible

Slope Stability

Marc Island, California

Figure 3-21

3.9 TRAFFIC AND CIRCULATION

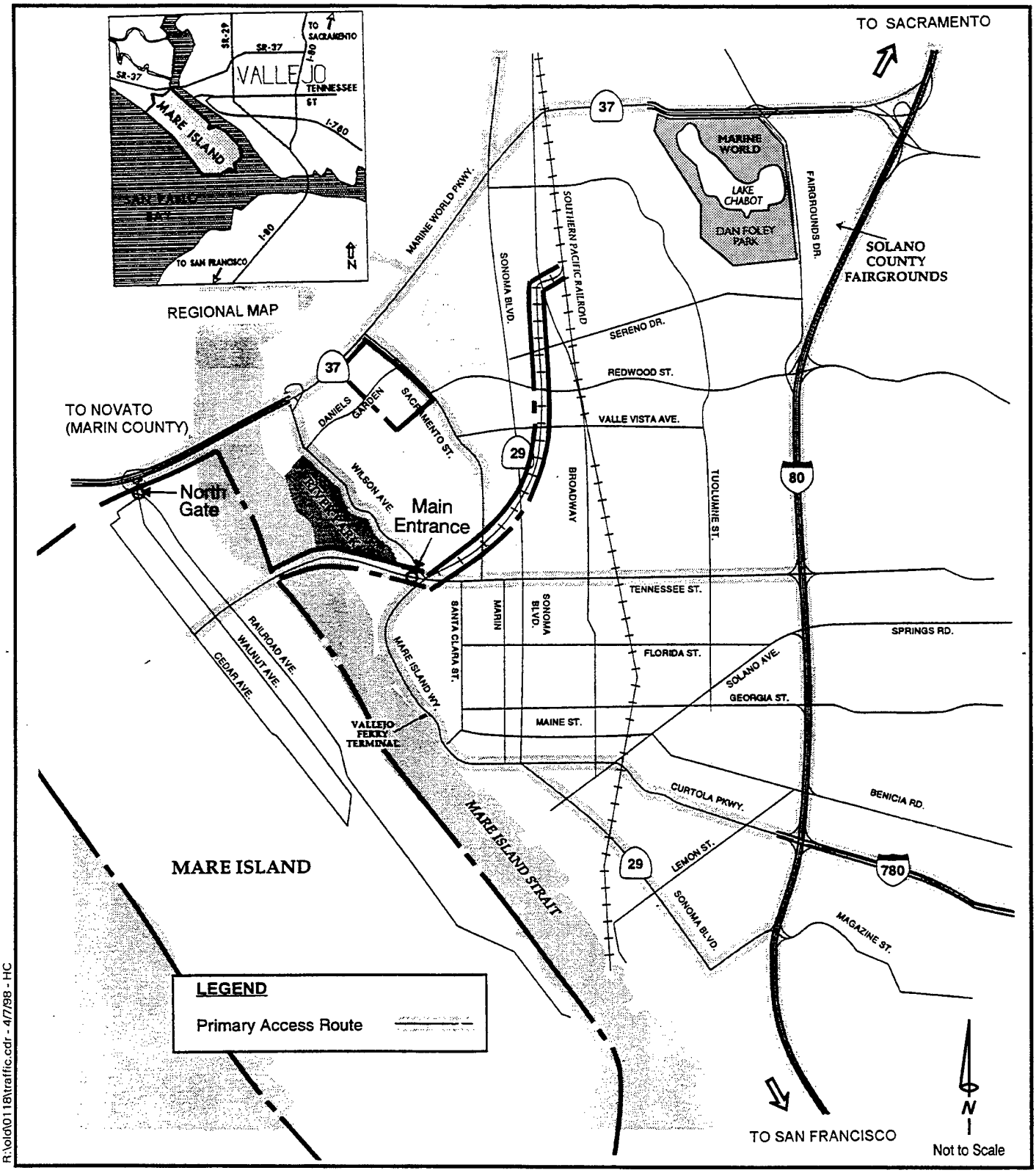
This section of the EIS/EIR evaluates traffic conditions and the circulation system providing access to and on Mare Island. Periods of maximum traffic volumes have been identified through the use of historic traffic count data on Mare Island (1988) and more current traffic data (1993) for off-island trips. This is consistent with that used for the traffic study for the Mare Island Naval Shipyard Reuse Plan (Vallejo 1994c). The island's circulation system is predominantly on Federal surplus land, with the exception of property that will be transferred to other Federal agencies.

Figure 3-22 shows the reuse plan traffic and circulation study area that comprises the ROI for this traffic analysis. This ROI includes regional and local access routes, as well as the Mare Island Street System. Regional access roadways include Interstate 80 (I-80), Interstate 780 (I-780), State Route 37 (SR 37), and State Route 29 (SR 29, Sonoma Boulevard). Local east/west access roadways include Tennessee Street-Mare Island Causeway, Mare Island Way, and Curtola Parkway. Local north-south access roadways include Wilson Avenue and Sacramento Street. The Mare Island street system is shown in Appendix G, Figure G-1.

Methodology

The circulation system includes freeways, streets, and intersections. The description of traffic operations for these facilities is based on the difference between traffic volumes and available capacity. Typically, as traffic volumes increase, the amount of available capacity is reduced, and congestion occurs. As congestion increases, travel speeds decrease, resulting in longer travel times between trip origins and destinations.

For both roadways and intersections, the Level of Service (LOS) scale is used to measure traffic operations. Service levels vary from A, the best, to F, the worst. Vallejo and Caltrans use LOS D operation as the poorest acceptable level during peak traffic periods. For analysis purposes Vallejo minimum standards have been assumed for evaluation of the Mare Island circulation system. Appendix Table G-5 describes the LOS scale. The roadway capacities identified in this analysis represent the maximum volume of traffic the roadway can carry at LOS D operation.



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The region of influence for traffic and circulation includes the City of Vallejo and Mare Island.

Traffic and Circulation

Mare Island, California

Legend:

Mare Island Naval Shipyard Property Boundaries (excluding submerged land)

Source: City of Vallejo, 1994c

Figure 3-22

3.9.1 Regional and Local Access Routes

To analyze regional and local (off-island) roadway capacities, Caltrans (1992) and Vallejo (1993) traffic data were used. PM peak-hour roadway volumes are shown at select locations in Figure 3-23. Each rectangle on Figure 3-23 shows the peak hour (directional volume) capacity and the reserve capacity of the roadway. Reserve capacity is the unused available capacity of a roadway. It is based on a theoretical number of vehicles the roadway can carry per hour when it is operating at an acceptable level of traffic movement. A negative reserve capacity indicates that the roadway is over capacity by the number of vehicles identified.

Regional Access Roadways

Interstate 80

I-80 extends north-south through Vallejo, providing regional access northeast to Sacramento and southwest to East Bay communities. It is 6 lanes wide south of SR 37 and 8 lanes wide north of SR 37. I-80 has a major interchange at SR 37, where 2 major traffic corridors intersect; at I-780-Curtola Parkway an east-west highway (I-780) ends and connects to the Vallejo street system.

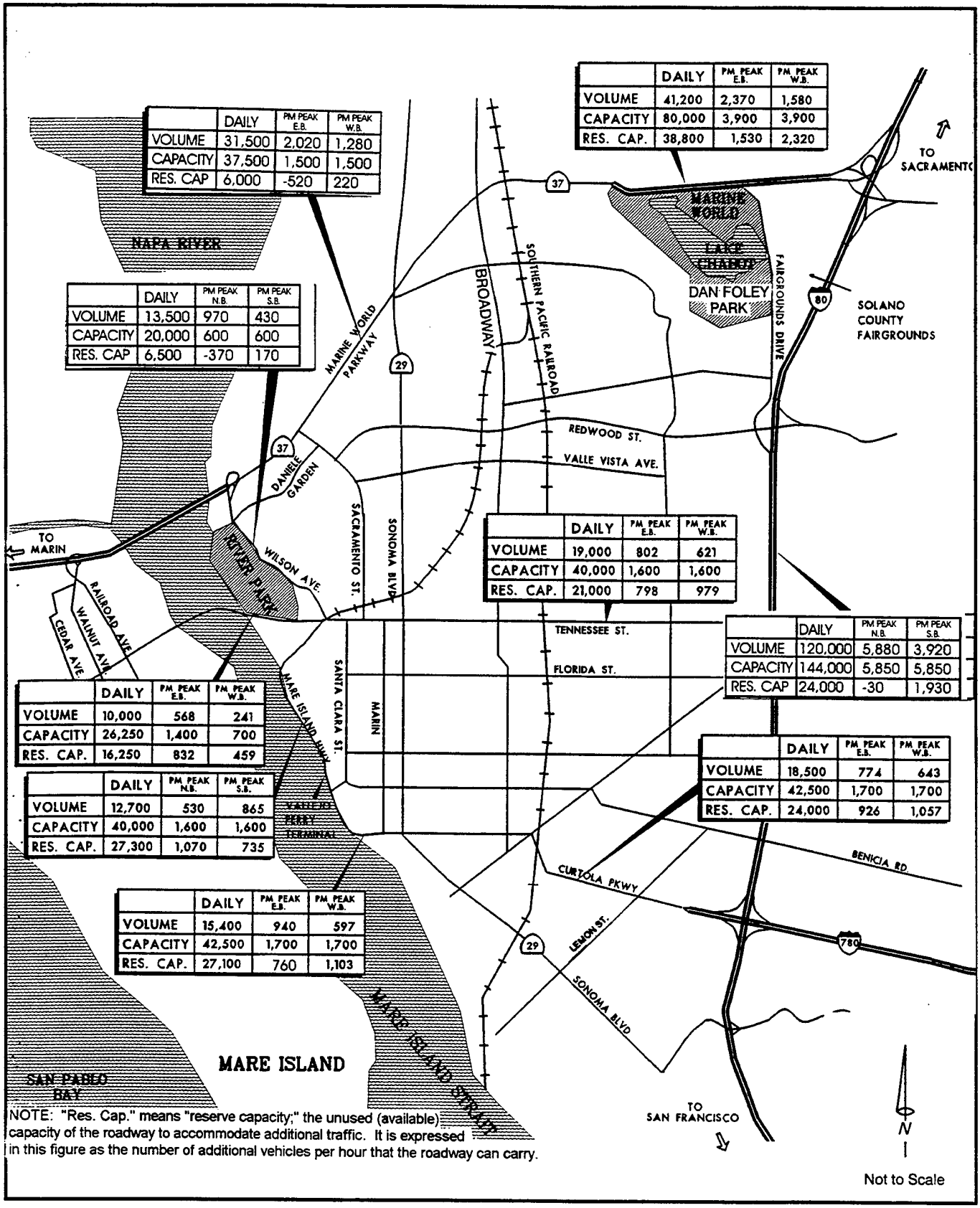
State Route 37

SR 37 extends east-west through Vallejo from I-80, connecting with US 101 in Novato (Marin County). The width of the roadway ranges from 2 to 5 lanes. SR 37 and Mare Island Causeway provide the only access to and from Mare Island. SR 37 provides direct access to Mare Island at Walnut Avenue, at the island's North Gate. Mare Island Causeway provides access at the island's Main Entrance at the western end of Tennessee Street in Vallejo.

The most direct routes to Mare Island, via SR 37, Tennessee Street, or Mare Island Way, are congested at certain locations during peak travel periods. On some street sections there is minimal reserve capacity (see Figure 3-23). This is especially true on SR 37, where 1993 eastbound and westbound PM peak-hour volumes are near capacity.

State Route 29

SR 29 (Sonoma Boulevard) runs north-south through central Vallejo, extending from north of SR 37 south to Curtola Parkway. It travels generally northwest-southeast south of Curtola Parkway to I-80.



	DAILY	PM PEAK E.B.	PM PEAK W.B.
VOLUME	31,500	2,020	1,280
CAPACITY	37,500	1,500	1,500
RES. CAP	6,000	-520	220

	DAILY	PM PEAK E.B.	PM PEAK W.B.
VOLUME	41,200	2,370	1,580
CAPACITY	80,000	3,900	3,900
RES. CAP.	38,800	1,530	2,320

	DAILY	PM PEAK N.B.	PM PEAK S.B.
VOLUME	13,500	970	430
CAPACITY	20,000	600	600
RES. CAP	6,500	-370	170

	DAILY	PM PEAK E.B.	PM PEAK W.B.
VOLUME	19,000	802	621
CAPACITY	40,000	1,600	1,600
RES. CAP.	21,000	798	979

	DAILY	PM PEAK N.B.	PM PEAK S.B.
VOLUME	120,000	5,880	3,920
CAPACITY	144,000	5,850	5,850
RES. CAP	24,000	-30	1,930

	DAILY	PM PEAK E.B.	PM PEAK W.B.
VOLUME	10,000	568	241
CAPACITY	26,250	1,400	700
RES. CAP.	16,250	832	459

	DAILY	PM PEAK E.B.	PM PEAK W.B.
VOLUME	18,500	774	643
CAPACITY	42,500	1,700	1,700
RES. CAP.	24,000	926	1,057

	DAILY	PM PEAK N.B.	PM PEAK S.B.
VOLUME	12,700	530	865
CAPACITY	40,000	1,600	1,600
RES. CAP.	27,300	1,070	735

	DAILY	PM PEAK E.B.	PM PEAK W.B.
VOLUME	15,400	940	597
CAPACITY	42,500	1,700	1,700
RES. CAP.	27,100	760	1,103

NOTE: "Res. Cap." means "reserve capacity;" the unused (available) capacity of the roadway to accommodate additional traffic. It is expressed in this figure as the number of additional vehicles per hour that the roadway can carry.

LEGEND:

Volume = Number of vehicles counted
Capacity = Number of vehicles roadway can carry at LOS D operation
Reserve Capacity = The unused (available) capacity of the roadway to accommodate additional traffic. It is expressed in this figure as the number of additional vehicles per hour that the roadway can carry.

Source: Crane Transportation Group, 1994

Peak Hour Reserve Capacity Primary Access Routes

Mare Island, California

Figure 3-23

City of Vallejo Access Roadways

As shown in Figure 3-22, access to Mare Island is from the intersection of Tennessee Street, Wilson Avenue, Mare Island Way, and Mare Island Causeway.

Access Roadway Intersection Operations

Table 3-16 shows existing PM peak-hour primary access route intersection levels of service. As shown in the table, the SR 37/Sonoma Boulevard and SR 37/Broadway intersections exceed LOS D during the PM peak hour.

TABLE 3-16
1993 PM PEAK HOUR LOS FOR SELECTED PRIMARY ACCESS ROUTE INTERSECTIONS CITY OF VALLEJO

Intersection	Control	LOS[1]
Tennessee and Wilson	Signalized	C/D[2]
Tennessee and Sacramento	Signalized	B
Tennessee and SR 29 (Sonoma)	Signalized	C
Tennessee and Tuolumne	Signalized	C/D[2]
Georgia and SR 29 (Sonoma)	Signalized	B
Curtola and SR 29 (Sonoma)	Signalized	B
Curtola and Solano	Signalized	B
SR 37 and Sacramento	Signalized	B
SR 37 and SR 29 (Sonoma Blvd.)	Signalized	F
SR 37 and Broadway	Signalized	E

Notes: [1]LOS was determined using the Signal 85 Software program and turning movement counts from the City of Vallejo 1993 Traffic Data Report.

[2]LOS borders the C/D threshold.

Source: Vallejo 1994c

The primary source of traffic congestion at these intersections is regional through-traffic. A study conducted by Vallejo showed traffic model estimates of Mare Island traffic. The study estimated that during the weekday PM peak hour, Mare Island traffic comprised 38 percent of the traffic on SR 37 at Sacramento Street. Outside this corridor, other selected intersections operate at or better than Vallejo's LOS D standard.

Access Route System Operations

Figure 3-23 shows daily and PM peak-hour roadway reserve capacities at select locations. As indicated by this figure, on SR 37 east of Sacramento Street (eastbound and westbound) and Wilson Avenue (southbound) demand exceeds capacity during the PM peak commute hour. Other roadways shown to have very little reserve capacity during the PM peak commute hour include Wilson Avenue (northbound), Mare Island Causeway (westbound), and SR 37 west of Fairgrounds Drive (eastbound).

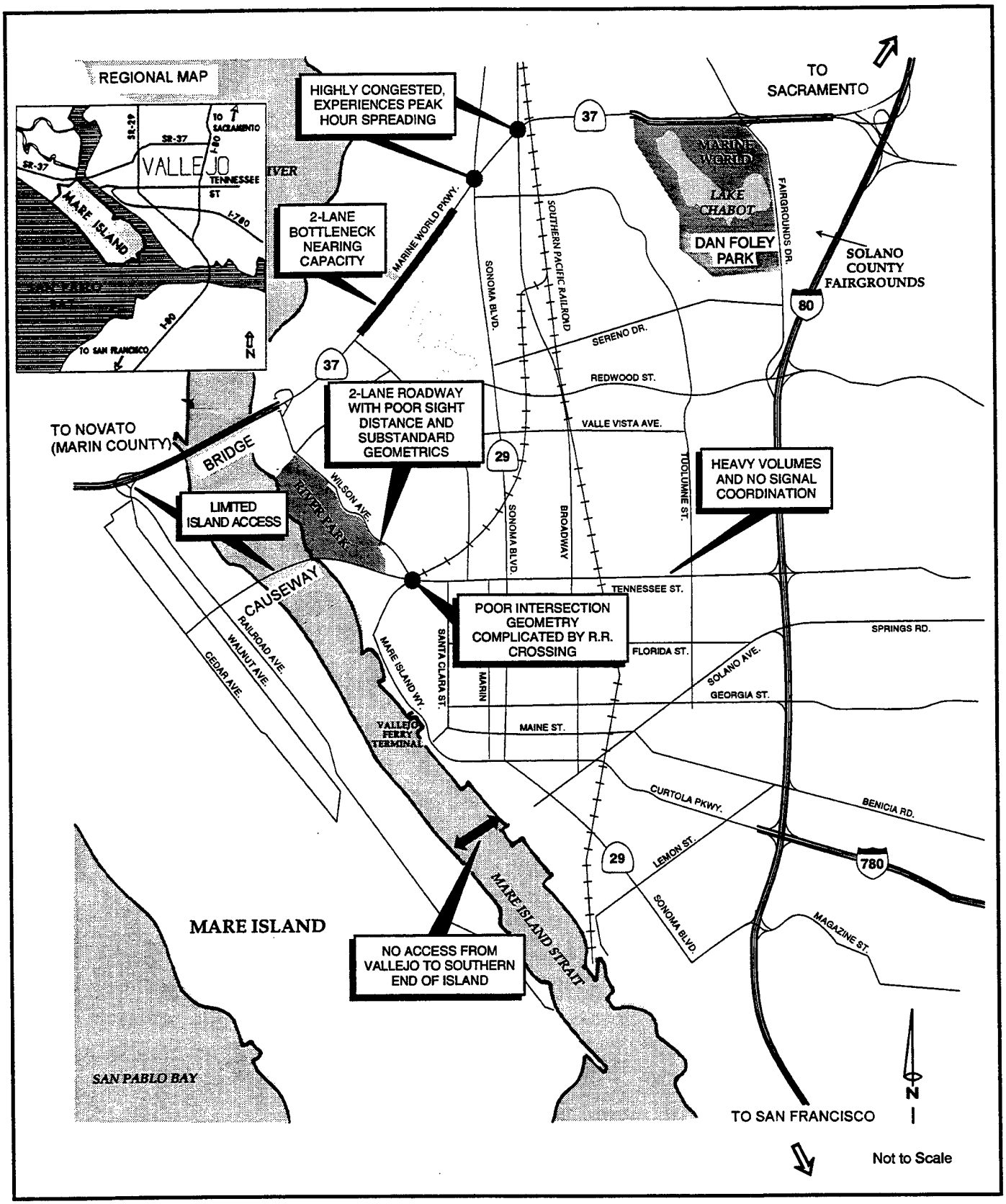
Regional Substandard/Problem Areas

Locations with little reserve capacity or poor levels of service constrain traffic flow through the area (see Figure 3-24), resulting in delays for motorists. Three locations along SR 37 currently experiencing high levels of congestion are the SR 37/SR 29 intersection, the SR 37/Broadway intersection, and SR 37 between SR 29 and Sacramento Street. A regional traffic characteristic affecting some of these locations is that SR 37 is a major connector between I-80 and US 101 and attracts large volumes of regional traffic passing through the area.

Wilson Avenue, Tennessee Street, and Mare Island Way, which provide direct access to the Mare Island Main Entrance, are limited in their ability to accommodate traffic. Wilson Avenue suffers from poor sight distances and substandard geometrics. Tennessee Street lacks left turn lanes at most intersections, has inefficient traffic signal progression along the corridor, and carries significant amounts of local business traffic. In addition to providing access to Mare Island, Mare Island Way is a 4-lane roadway with left-turn lanes at intersections.

3.9.2 Mare Island Circulation System

The Mare Island circulation system (see Figure 3-25) includes arterials, collectors, and residential streets. All the major streets are on surplus land. Most of the major streets run north-south (Cedar, Walnut, Railroad, California), while Mare Island Causeway (G Street) provides the primary east-west link with Vallejo. Walnut Avenue connects directly to the North Gate and SR 37. Wilson Avenue and Mare Island Causeway provide access to the Main Entrance area. To accommodate the historic heavy directional peak-hour traffic flows, much of the arterial roadway system consists of 1-way streets or 2-way streets with reversible center lanes.



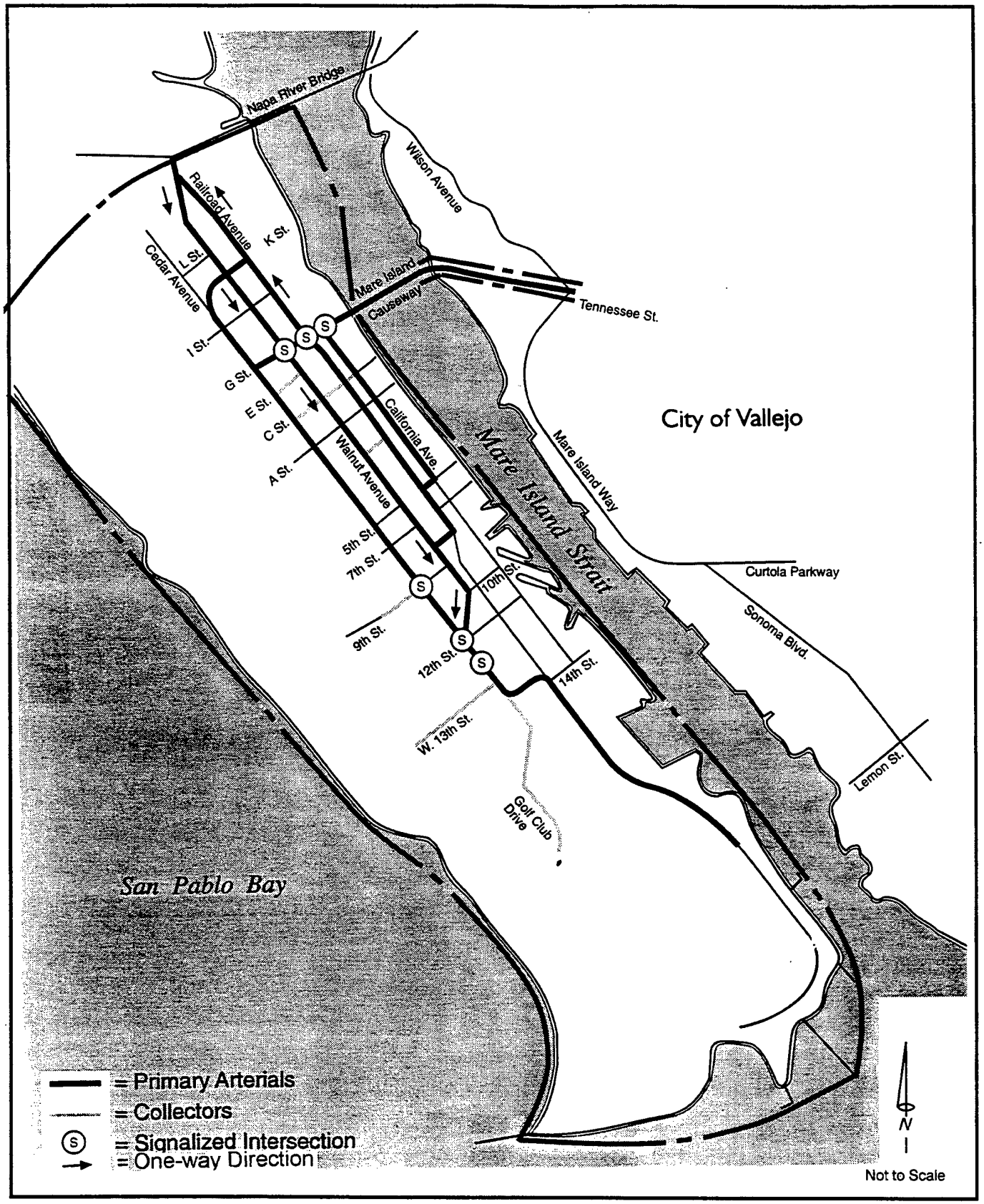
There are existing constraints to roadway operation.

Primary Access

Mare Island, California

Figure 3-24

Source: Vallejo, 1994c



The Mare Island street system has several parallel north-south routes.

LEGEND:

Mare Island Naval Shipyard Property Boundaries (excluding submerged land)

Source: City of Vallejo, 1994c

Mare Island Street System

Mare Island, California

Figure 3-25

The North Gate and Main Entrance provide the only vehicle and pedestrian access onto Mare Island. The gates restrict access and are reduced to 1 inbound lane and 2 outbound lanes at the gate control points. Historically, only personnel whose vehicles had identification stickers were allowed to use the North Gate. All others, including visitors and delivery persons, used the Main Entrance.

Roosevelt Terrace, the off-island residential facility, is located on the corner of Sacramento Street and SR 37 in Vallejo. Three Vallejo residential streets that branch off from Sacramento Street provide access to Roosevelt Terrace.

Mare Island Roadways

Streets on Mare Island have been classified as major arterial, major collector, residential, alley, or service roads. Mare Island streets and roads evolved over the 140-year history of the base. Many of the major roadways have pavement surfaces, conditions for which vary from fair to severely deteriorated. Appendix G provides further description of the Mare Island street system. Table G-1 in Appendix G lists each Mare Island street, indicating street length, number of lanes, and width of lanes.

Most of the collector streets are 1 to 2 blocks long and provide connections to residential areas or east-west connections between the arterials. Other streets include residential streets, alleys, and a number of service roads that are largely unstriped.

On-Island Traffic Volumes

Traffic counts available for 1988 indicate that the island had a peak-hour trip generation of 9,477 vehicles. Table 3-17 indicates 1988 trip generation by land use type during the PM peak. As illustrated by this table, during shipyard operations, the largest number of PM peak trips was generated by education/office, office and warehouse land uses.

Entrance Operation

Access to the shipyard continues to be via the Main Entrance and the North Gate. The 3-lane Main Entrance is an extension of Tennessee Street called Mare Island Causeway, and the 3-lane North Gate entrance is directly off SR 37. Under operational conditions, 4,795 PM peak-hour vehicles entered and exited Mare Island, of which 57 percent used the Main Entrance and 43 percent used the North Gate. During the peak period (about 3:30 PM to 4:30 PM) 78 percent of the vehicles were outbound and 22

TABLE 3-17
MARE ISLAND 1988 TRIP GENERATION

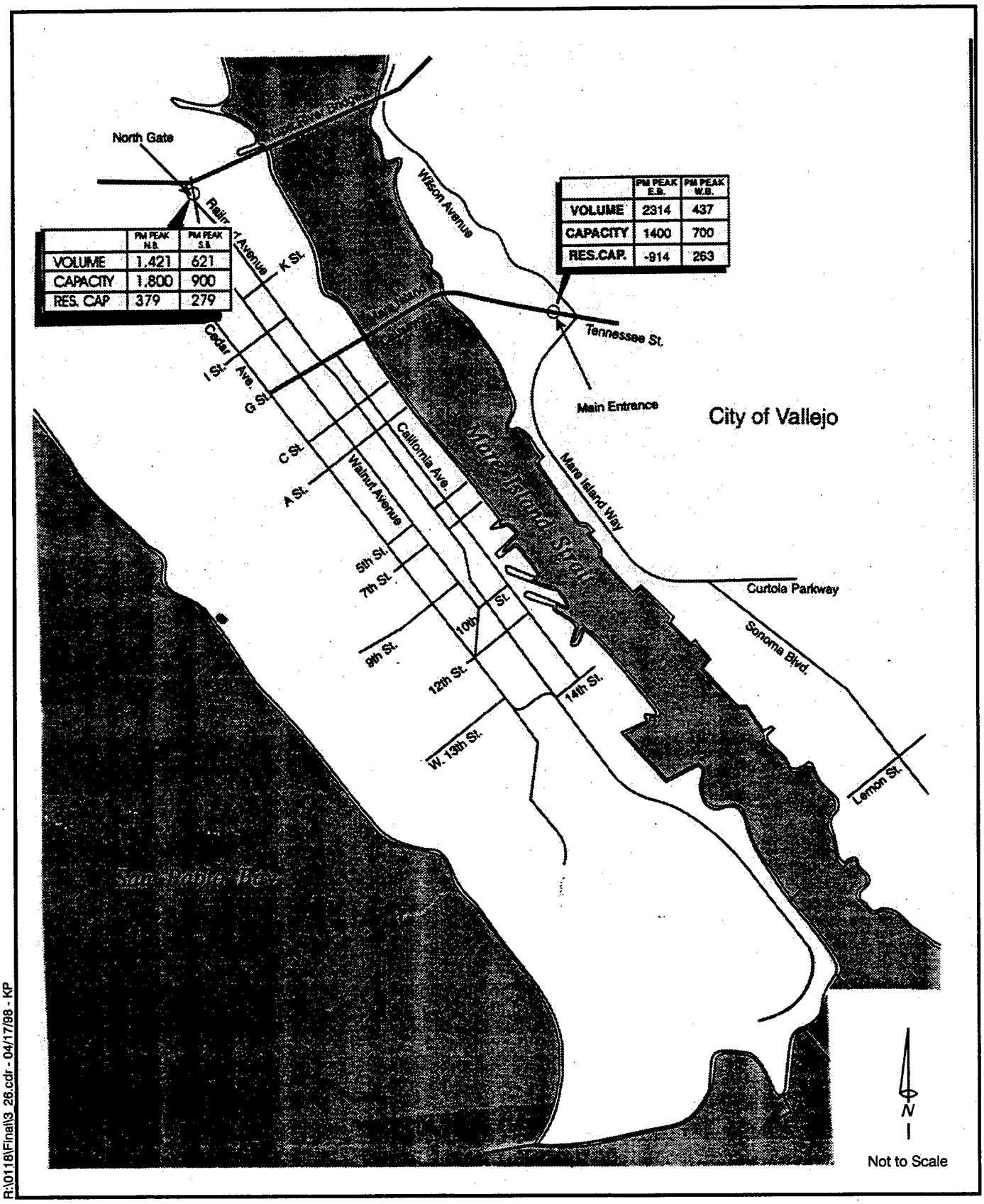
	1988		
	Quantity	Units	PM Peak Trips
Residential	483	DU[1]	488
Recreation			
Golf	172	acres	67
Regional Park	27	acres	32
Open Space/Rec.	1686	acres	49
Education/Office	500	KSF[2]	1120
Office	1200	KSF	2688
Retail	120.7	KSF	917
Light Industry	300	KSF	294
Heavy Industry	3100	KSF	589
Marina	0	berths	0
Civic	181.7	KSF	407
Warehouse	2900	KSF	2146
Dormitory	2000	beds	680
TOTAL			9477

[1] DU = Dwelling units
[2] KSF = 1,000 square feet

Source: Vallejo 1994c, as amended by Crane Transportation Group

percent were inbound. The 3 lanes at these entrances are striped for reversible use during peak hours, which can result in as many as 4 one-direction lanes entering or exiting the island at one time, 2 at the North Gate and 2 at the Main Entrance. Figure 3-26 shows preclosure PM peak-hour volumes.

The street system operation constraints for Mare Island have been analyzed at the 2 gates and are shown in Figures 3-27 (Main Entrance) and 3-28 (North Gate). Using conservative estimates of capacity from the Vallejo traffic model, the Main Entrance has a 1-way capacity of about 1,400 vehicles per hour. Historically, converting all 3 lanes on the Mare Island Causeway to 1 direction accommodated peak period volumes. According to 1988 traffic counts, up to 2,700 vehicles exited the island during the PM peak hour under this configuration. This created congestion on Tennessee Street, Wilson Avenue, Mare Island Way, and SR 37. The North Gate has a somewhat higher 1-way capacity of about 1,800 vehicles per hour because the entrance connects directly to SR 37 ramps.



	PM PEAK N.B.	PM PEAK S.B.
VOLUME	1,421	621
CAPACITY	1,800	900
RES. CAP	379	279

	PM PEAK E.B.	PM PEAK W.B.
VOLUME	2314	437
CAPACITY	1400	700
RES.CAP.	-914	263

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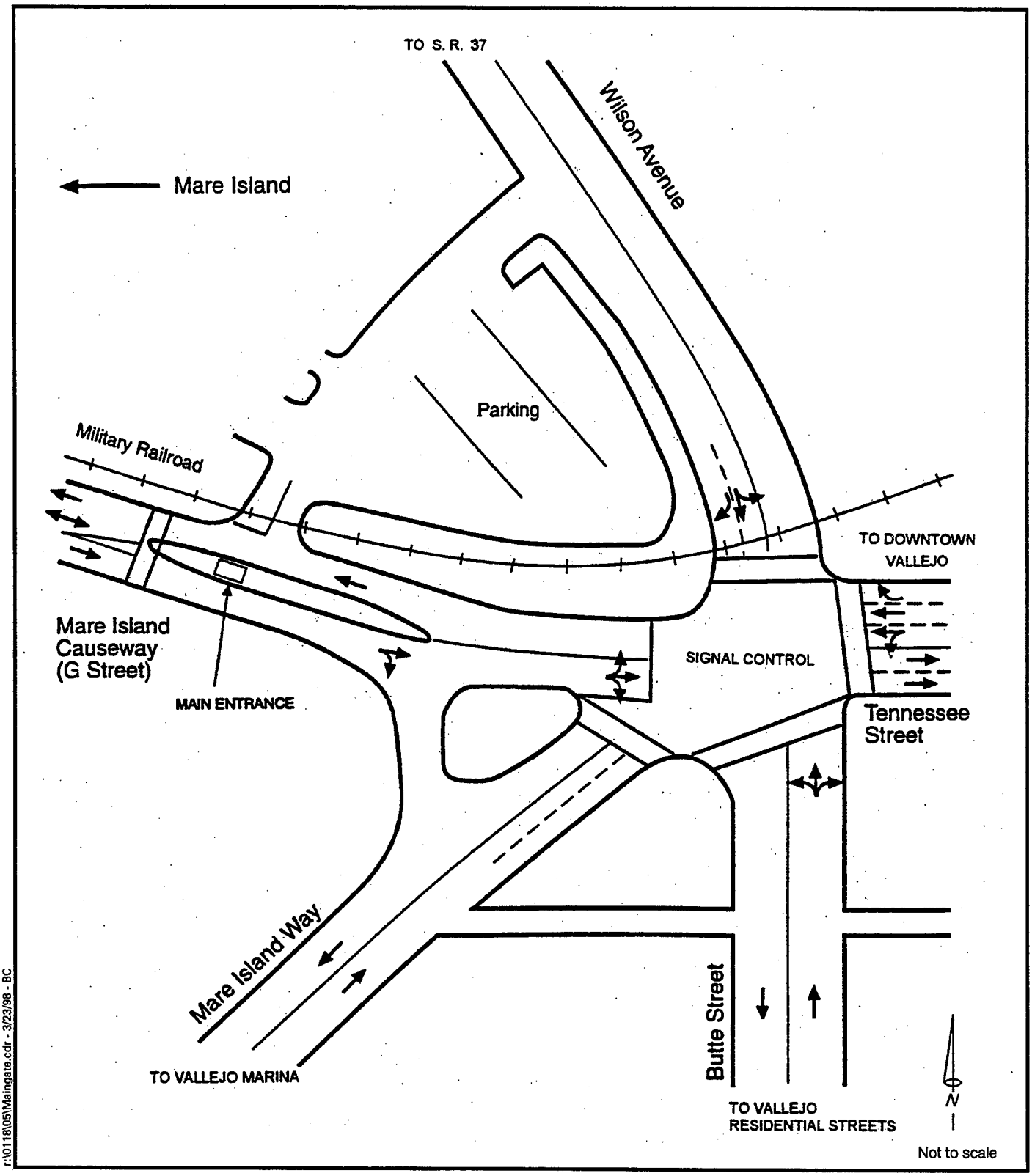
Roadway traffic volumes and capacities define roadway operation.

PM Peak Hour Reserve Capacity for Mare Island Entrances

Mare Island, California

Source: Vallejo, 1994c

Figure 3-26



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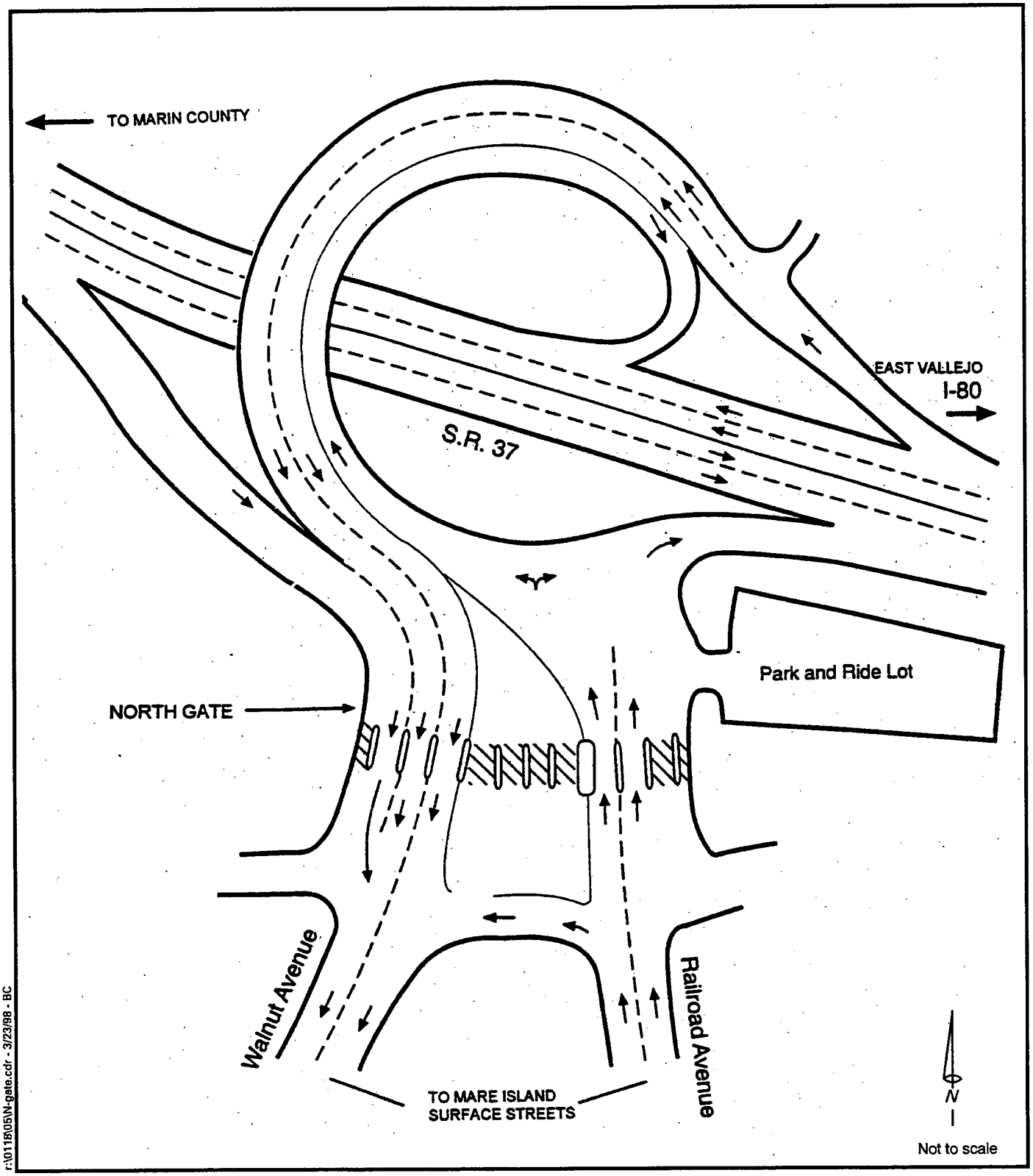
The Main Gate to Mare Island is one approach leg of a major Vallejo intersection.

1995 Main Gate Geometrics

Mare Island, California

Source: Vallejo, 1994c

Figure 3-27



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The North Gate to Mare Island connects directly to State Route 37.

1995 North Gate Geometrics

Mare Island, California

Source: Vallejo, 1994c

Figure 3-28

A Main Entrance capacity limitation is the drawbridge and railroad tracks on the causeway. Rail or drawbridge activity during peak periods essentially shuts down over half the capacity to or from the island. This occasionally occurred because neither railroad nor boat schedules take into consideration commuter traffic peak hours.

Intersection Operation

There are 6 intersections with signals and a number of intersections without signals on Mare Island, as shown in Figure 3-25. Table 3-18 provides historic PM peak-hour level of service data for selected key intersection on the island. As indicated by this table, signalized intersections operated at less congested levels than unsignalized intersections on the island.

TABLE 3-18
MARE ISLAND STREET SYSTEM
PM PEAK-HOUR INTERSECTION LOS

Intersection	Control	LOS	PM Peak Hour
Walnut/G	Signalized	A	3:30 - 4:30
Railroad/G	Signalized	D	3:30 - 4:30
12th/Cedar	Signalized	B	3:30 - 4:30
Railroad/C	Unsignalized	F	3:30 - 4:30
14th/Cedar	Unsignalized	D	3:30 - 4:30
5th/Cedar	Unsignalized	E	3:30 - 4:30

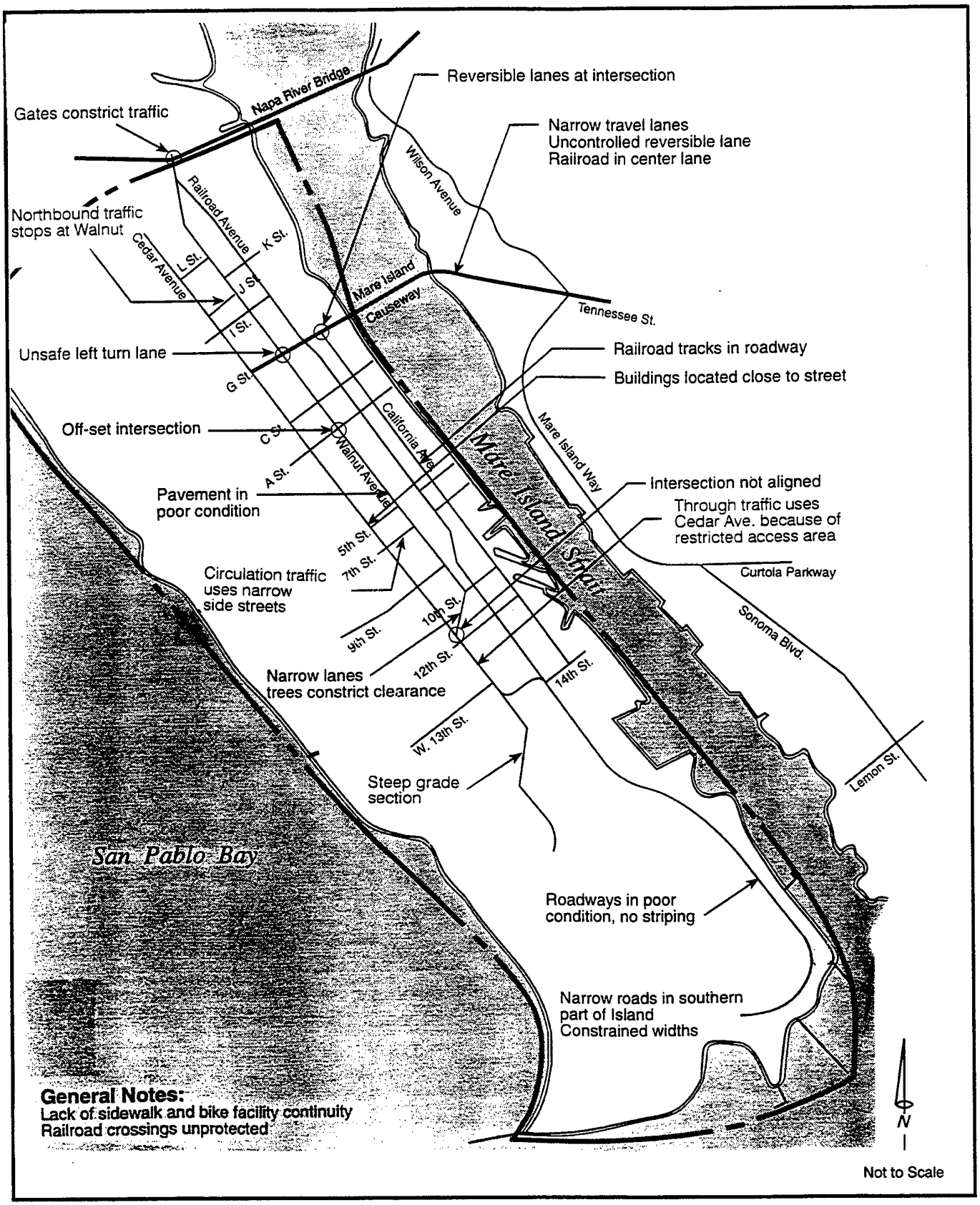
Source: Vallejo 1994c

Substandard/Problem Areas

Figure 3-29 summarizes existing street system conditions that will affect future reuse of the island. Areas of concern identified on the figure include substandard setbacks of trees and buildings and limited sightlines, limited street lighting, absence of curbs and gutters on many streets, lack of traffic control crossing, and lack of traffic control systems for the reversible lane systems on G Street, Mare Island Causeway and California Avenue.

3.9.3 Mare Island Parking Facilities

Parking on Mare Island consists of on-street spaces, formal surfaced parking lots, and informal parking. An inventory of formal off-street parking



The Mare Island street system would present constraints to a future private use.

LEGEND:

Mare Island Naval Shipyard Property Boundaries (excluding submerged land)

Source: City of Vallejo, 1994c

Mare Island Street System Analysis

Mare Island, California

Figure 3-29

identified 8,580 spaces (see Figure 3-30). Most of the lots are small (50 to 100 spaces), while other parking areas contain over 800 spaces. The former Controlled Industrial Area (CIA) was designed so that employee and visitor parking was restricted to outside areas. Thus, most parking for the CIA was provided adjacent to and just south of it.

3.9.4 Transit System – Vallejo

There is no public transit service from Vallejo to Mare Island. See Appendix G for a description of the Vallejo transit system.

3.9.5 Bicycle and Pedestrian System

According to the 1982 Bicycle Use Study for Mare Island Naval Shipyard and the 1993 Mare Island Commuter Survey, bicycles are used for commuting and on-island travel. The following discussion describes the conditions of the off-island and on-island facilities.

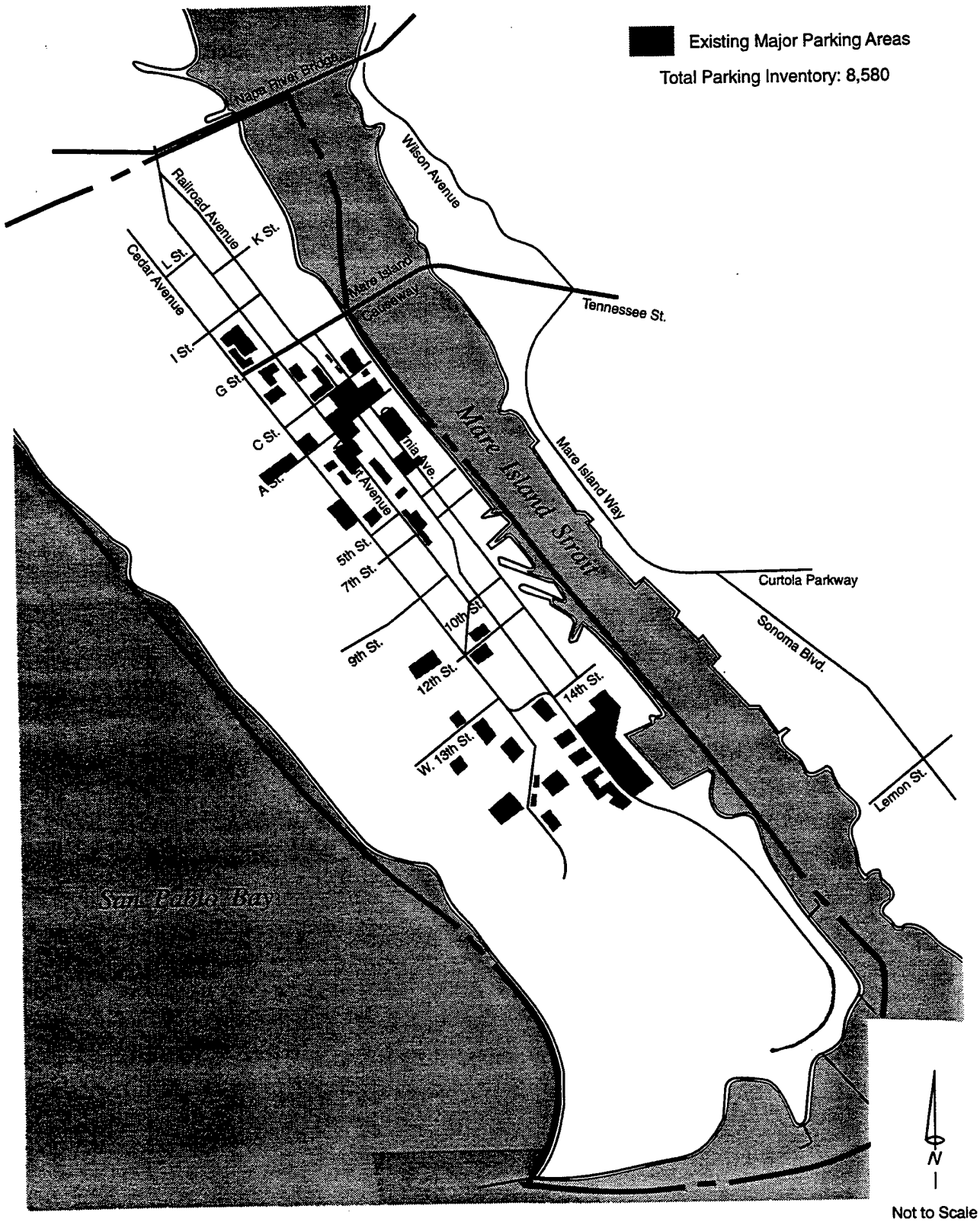
City of Vallejo Bicycle and Pedestrian System

A main characteristic of the Vallejo bicycle/pedestrian system is that it takes advantage of the existing street system. Most of the bicycle routes are on-street Class III facilities, meaning that the bike lane is marked by signs only, and bicyclists share the travel lane with vehicular traffic. The system, however, also has Class I facilities near Mare Island, with marked bike lanes separated from the vehicle travel lane. Hiking and bicycling trails extend along the boundaries of River Park and along the waterfront near the ferry terminal (see Figure 3-31). The most common pedestrian facilities are sidewalks.

Mare Island Bicycle and Pedestrian System

Existing Mare Island bicycle lanes and paths total about 1.6 miles and are largely found on California and Railroad Avenues (see Figure 3-31) on surplus land. Most of the bike lanes meet Caltrans minimum standards for width, while the bike path on the north end of the island is poorly maintained, narrow, and unstriped. The island has a relatively short dedicated bike lane/path system when compared to the street system and sidewalks.

Industrial workers were the primary users of bicycles on the island. The industrial areas lacked close-in parking, and the CIA was closed to vehicles. In 1982, there were about 3,400 government-provided bicycles available for use on the island.



The Mare Island major parking facilities are clustered near the main gate and just south of the controled industrial area.

LEGEND:

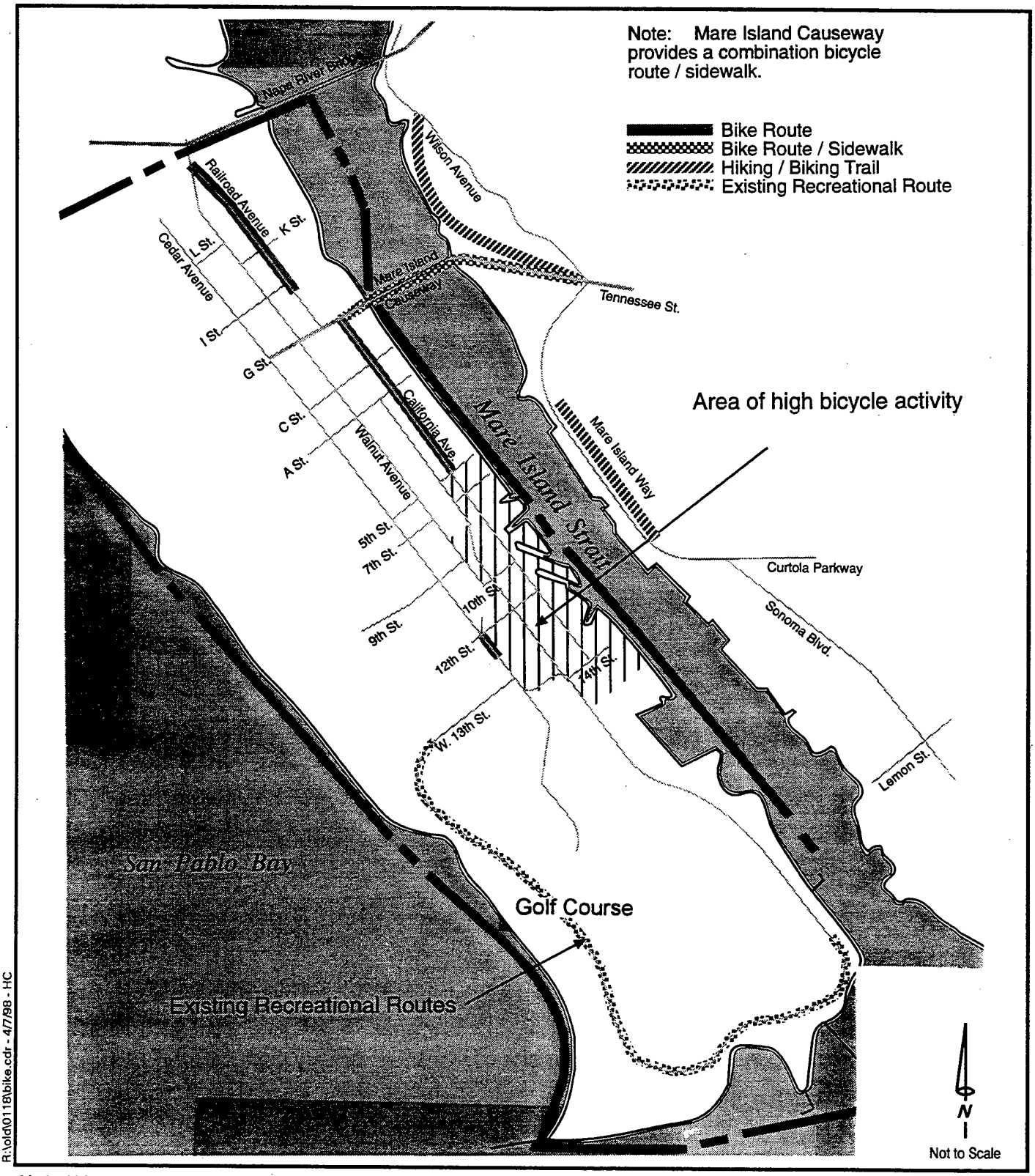
Mare Island Naval Shipyard Property Boundaries (excluding submerged land)

Source: City of Vallejo, 1994c

Parking Facilities

Mare Island, California

Figure 3-30



R:\old\0118\bike.cdr - 4/7/98 - HC

Marked bicycle lanes and paths
Are very limited on Mare Island.

Legend:

Mare Island Naval Shipyard Property Boundaries (excluding submerged land)

Bicycle Lane and Paths

Mare Island, California

Source: City of Vallejo, 1994c

Figure 3-31

Few of the existing Mare Island streets have sidewalks on both sides of the street. Sidewalks are provided on at least one side of all residential streets and on many of the central island streets on surplus land. Pedestrian-activated signals and marked crosswalks are provided at signalized intersections. There are no sidewalks on the north and south ends of the island.

3.9.6 Truck and Rail System

Truck Facilities

Trucks typically use the regional and local access routes identified in Figure 3-32. Existing truck routes allow access to either the North Gate or main entrance.

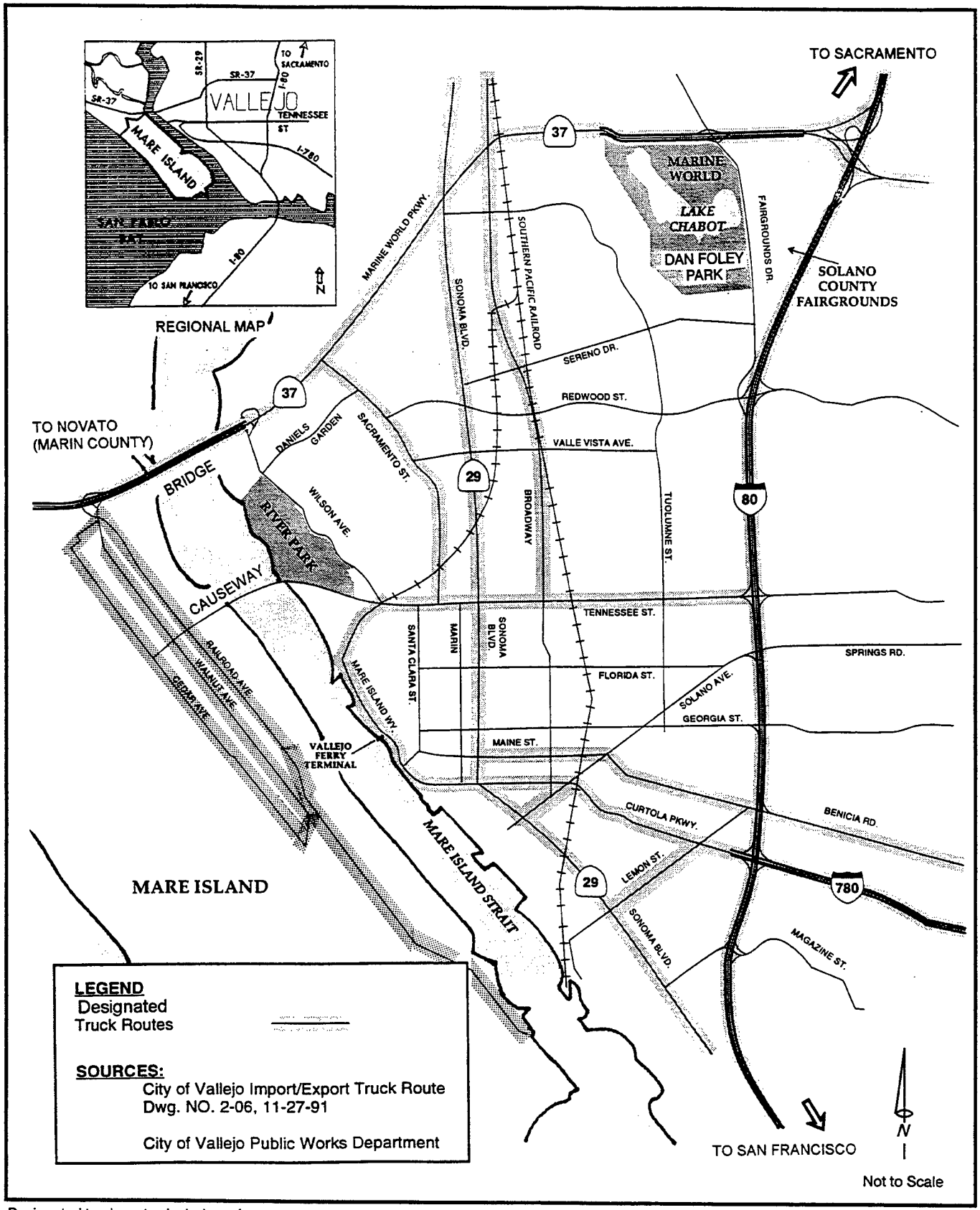
Railroad Facilities

The Navy-owned railroad had an elaborate network of trackage designed to serve heavy shipyard operations. Historically, the Mare Island Naval Shipyard railroad was used primarily for intra-shipyard transport of materials for submarine overhaul projects. Routine movement was 2 or 3 intra-yard rail car movements; rail movements across the causeway to and from the California Northern Railroad (CNR) averaged about 1 car per month.

There were about 22 miles of active track and 24 miles of inactive track (see Figure 3-33) on Mare Island. Active trackage is generally in excellent condition. With the exception of certain yard storage and classification tracks, trackage on the island was relaid with 115-pound continuous welded rail in 1992 and 1993.

A single-track line, crossing the Napa River via the Mare Island Causeway into Vallejo, connects the railroad with the local common carrier railroad network. It continues for about a mile to connect with the CNR just north of the intersection of Sereno Drive and Broadway. Track on this connecting line is in excellent condition.

The connecting line passes through northern Vallejo and has 9 at-grade crossings with city streets. Most are protected by flashing signals and automatic crossing gates. The causeway line is aligned in the center lane of the 3-lane bridge and crosses 1 lane of road traffic at either end of the bridge; flashing signals manually activated by the bridge tender protect these crossings. On Mare Island there are no electrical safety devices protecting street traffic from rail movements at the numerous at-grade crossings.



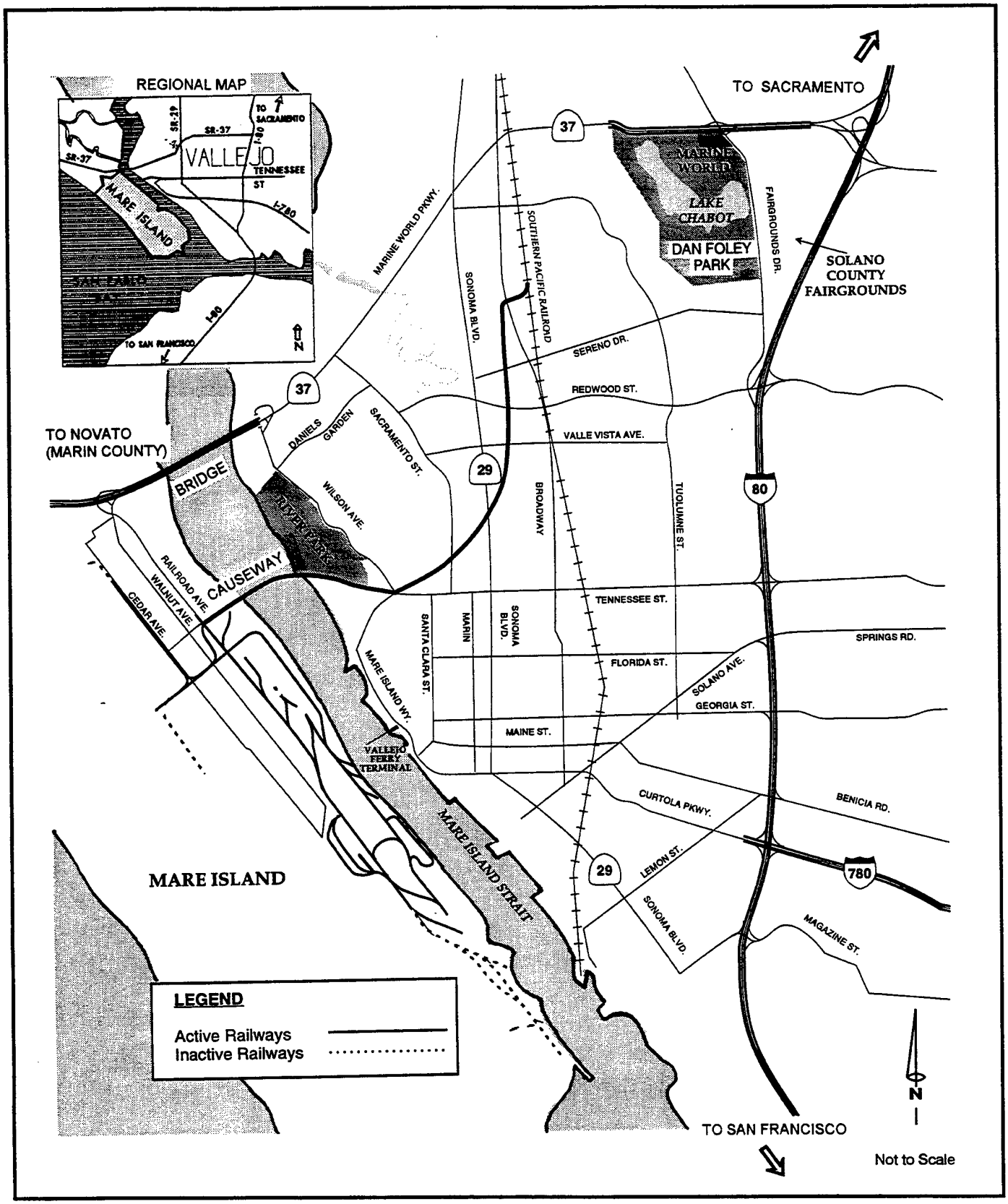
Designated truck routes include major streets on Mare Island and primary access routes in Vallejo.

Truck Access to Mare Island

Mare Island, California

Source: City of Vallejo, 1994c

Figure 3-32



There are both active and inactive railways on Mare Island.

Existing Rail Facilities

Mare Island, California

Figure 3-33

Source: Vallejo, 1994c

3.9.7 Aviation System

The Mare Island aviation system consisted of 2 helicopter landing areas, 1 on the former Marine Corps parade grounds and the other on a converted parking lot on Walnut Avenue on the north end of the island.

3.9.8 Transportation Plans and Regulations

Federal Highway Administration (FHWA)

The FHWA is the agency of the Department of Transportation responsible for the Federally funded roadway system, including the interstate highway network and portions of the primary state highway network. FHWA funding is provided through the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), Pub. L. 102-240.

ISTEA funding and the FHWA have a jurisdictional influence over the Mare Island reuse planning effort to the extent that national policies on funding, as described in the ISTEA legislation, affect the types of local transportation programs to be funded. The upgrading of I-80 and SR 37 within the study area is wholly or partially funded by Federal dollars. Federal funds also are used to purchase buses for the transit system and vessels for the Vallejo ferry. Potential projects to be funded through the FHWA and the ISTEA process include a southern crossing, heliport improvements, rail upgrades, signal coordination, bikeways, and transit system upgrades.

Metropolitan Transportation Commission (MTC)

The MTC is the regional organization responsible for prioritizing transportation projects in a Regional Transportation Improvement Program (RTIP) for Federal and state funding. MTC evaluates each project for need, feasibility, and adherence to the ISTEA policies and congestion management program (CMP). The CMP requires that each jurisdiction identify existing and future transportation facilities that will operate below an acceptable service level and that they provide mitigations where future growth degrades that service level.

California Department of Transportation (Caltrans)

Caltrans is responsible for planning, designing, constructing, and maintaining all state highways. One of the 2 access points to Mare Island is the North Gate from SR 37, a Caltrans facility. There are plans to improve the highway east of Mare Island Strait, which will improve access to Mare Island from I-80. Caltrans is including the reuse in its project plans.

Caltrans jurisdictional interest would extend to improvements to the North Gate and the proposed southern crossing, including connections and impact to any state or Federal facility (I-80 and I-780). Federal financing would be subject to review by Caltrans staff, the California Transportation Commission (CTC), and MTC. If the southern crossing were to be designated a route of regional significance and/or a state highway, Caltrans would have primary jurisdiction over the design, construction, and maintenance of the facility.

Caltrans design standards would be used on most new and expanded roadways on Mare Island where they superseded city design standards. Proposed alternative modes, such as bicycle facilities, expanded transit service, or ferry service, likely would be funded with Federal funds, which are administered by Caltrans and the CTC. As such, Caltrans will be included in the planning and review process for these facilities.

3.10 AIR QUALITY

This section identifies the existing air quality conditions in the vicinity of Mare Island. The ROI appropriate for air quality issues will vary according to the type of air pollution being discussed. Primary pollutants, such as carbon monoxide and directly emitted particulate matter, have a localized ROI generally restricted to Vallejo or to areas in the immediate vicinity of the source of emissions. Secondary pollutants, such as ozone and secondary particulate matter, have an ROI that includes the entire San Francisco Bay region.

3.10.1 Air Quality Terminology

The term "pollutant emissions" refers to the amount (usually stated as a weight) of 1 or more specific compounds introduced into the atmosphere by a source or group of sources. In practice, most pollutant emissions data are presented as "emission rates," the amount of pollutants emitted during a specified increment of time or during a specified increment of emission source activity. Typical measurement units for emission rates on a time basis include pounds per hour, pounds per day, or tons per year. Typical measurement units for emission rates on a source activity basis include pounds per thousand gallons of fuel burned, pounds per ton of material processed, and grams per vehicle mile of travel.

The term "ambient air quality" refers to the atmospheric concentration of a specific compound (amount of pollutants in a specified volume of air) experienced at a particular geographic location that may be some distance from the source of the relevant pollutant emissions. The ambient air quality levels measured at a particular location are determined by wind patterns, precipitation patterns, and chemical reactions of pollutants emitted into the atmosphere.

Ambient air quality data generally are reported as a mass per unit volume (e.g., micrograms per cubic meter of air) or as a volume fraction (e.g., parts per million by volume). Measurements of particulate matter concentrations normally are reported in units of micrograms per cubic meter.

Air pollutants often are characterized as being "primary" or "secondary" pollutants. Primary pollutants are those emitted directly into the atmosphere (such as carbon monoxide, sulfur dioxide, lead particulates, and hydrogen sulfide). Secondary pollutants are those formed through chemical reactions in the atmosphere (such as ozone, nitrogen dioxide, and sulfate particles). These chemical reactions usually involve primary pollutants, normal constituents of the atmosphere, and other secondary pollutants.

3.10.2 Meteorology

The climate of Mare Island is characterized by cool rainy winters and warm dry summers. Like the rest of the Bay Area, the Vallejo region is classified as a Marine West Coast Climate type with Mediterranean characteristics. Average rainfall is about 17 to 20 inches per year. Winter temperatures are generally 40 to 60°F, and summer temperatures are generally 55 to 80°F. The prevailing wind direction in Vallejo is from the west. Typical wind speeds are less than 5 mph in the fall and winter and about 10 mph in the spring and summer.

3.10.3 Ambient Air Quality Standards

Both the State of California and the Federal government have established ambient air quality standards for several different pollutants (Table 3-19). Pollutants covered by Federal or state ambient air quality standards often are referred to as criteria pollutants. As indicated in Table 3-19, ambient standards for some criteria pollutants have been set for both short and long exposure episodes. Most ambient standards have been set to protect public health. State ambient air quality standards for some pollutants are based on other considerations, such as protecting crops and materials or avoiding nuisance conditions. Current air quality standards for particulate matter are based on the inhalable component of suspended particulate matter (PM_{10}). Previous air quality standards for particulate matter were based on a broader range of particle sizes (TSP).

Areas that violate a Federal or state ambient air quality standard are classified as nonattainment areas. Areas that meet Federal or state air quality standards are generally categorized as attainment or unclassified areas.

In June 1995, the San Francisco Bay Area was reclassified from a moderate nonattainment area to an attainment/maintenance area for the Federal 1-hour ozone standard. Because there were several violations of the Federal ozone standard in 1995 and 1996, EPA is proposing to change the Bay Area's ozone designation back to moderate nonattainment. The urbanized portions of the San Francisco Bay Area are presently categorized as moderate nonattainment areas for the Federal carbon monoxide standards. The Bay Area is currently designated as unclassified for the Federal PM_{10} standard. The BAAQMD believes that the San Francisco Bay Area has achieved the Federal carbon monoxide standards, and has requested redesignation to an attainment status.

In July 1997, the US Environmental Protection Agency (EPA) revised the violation criteria for the existing Federal PM_{10} standards, adopted a new 8-

TABLE 3-19
AMBIENT AIR QUALITY STANDARDS APPLICABLE IN CALIFORNIA

Pollutant	Symbol	Averaging Time	Standard, as parts per million by volume		Standard, as micrograms per cubic meter		Violation Criteria	
			California	National	California	National	California	National
Ozone	O_3	1 Hour	0.09	0.12	180	235	If exceeded	If exceeded on more than 3 days in 3 years
		8 Hours	–	0.08	–	160	–	If exceeded by the mean of annual 4th highest daily values for a 3-year period
Carbon Monoxide		8 Hours	9.0	9.0	10,000	10,000	If exceeded	If exceeded more than 1 day per year
		1 Hour	20	35	23,000	40,000	If exceeded	If exceeded more than 1 day per year
Inhalable Particulate Matter	PM_{10}	Annual Geometric Mean	–	–	30	–	If exceeded	–
		Annual Arithmetic Mean	–	–	–	50	–	If exceeded as a 3-year single station average
		24 Hours	–	–	50	150	If exceeded	If exceeded by the mean of annual 99th percentile values over 3 years
Fine Particulate Matter	$PM_{2.5}$	Annual Arithmetic Mean	–	–	–	15	–	If exceeded as a 3-year spatial average of data from designated stations
		24 Hours	–	–	–	65	–	If exceeded by the mean of annual 98th percentile values over 3 years
Nitrogen Dioxide	NO_2	Annual Average	–	0.053	–	100	–	If exceeded
		1 Hour	0.25	–	470	–	If exceeded	–
Sulfur Dioxide	SO_2	Annual Average	–	0.03	–	80	–	If exceeded
		24 Hours	0.04	0.14	105	365	If exceeded	If exceeded more than 1 day per year
		3 Hours	–	0.5	–	1,300	–	If exceeded more than 1 day per year
		1 Hour	0.25	–	655	–	If exceeded	–
Lead Particles	Pb	Calendar Quarter	–	–	–	1.5	–	If exceeded more than 1 day per year
		30 Days	–	–	1.5	–	If equaled or exceeded	–
Sulfate Particles	SO_4	24 Hours	–	–	25	–	If equaled or exceeded	–
Hydrogen Sulfide	H_2S	1 Hour	0.03	–	42	–	If equaled or exceeded	–
Vinyl Chloride	C_2H_3Cl	24 Hours	0.010	–	26	–	If equaled or exceeded	–

Notes: All standards except the national PM10 and PM2.5 standards are based on measurements corrected to 25 degrees C and 1 atmosphere pressure.
The national PM10 and PM2.5 standards are based on direct flow volume data without correction to standard temperature and pressure. Decimal places shown for standards reflect the rounding precision used for evaluating compliance.
Except for the 3-hour sulfur dioxide standard, the national standards shown are the primary (health effects) standards.
The national 3-hour sulfur dioxide standard is a secondary (welfare effects) standards.
EPA adopted new ozone and particulate matter standards on July 18, 1997; the new standards became effective on September 16, 1997.
The national 1-hour ozone standard will be rescinded for an area when EPA determines that the standard has been achieved in that area.
Previous national PM10 standards (which had different violation criteria than the September 1997 standards) will remain in effect for existing PM10 nonattainment areas until EPA takes actions required by Section 172(e) of the Clean Air Act or approves emission control programs for the relevant PM10 state implementation plan.
Violation criteria for all standards except the national annual standard for PM2.5 are applied to data from individual monitoring sites.
Violation criteria for the national annual standard for PM2.5 are applied to a spatial average of data from one or more community-oriented monitoring sites representative of exposures at neighborhood or larger spatial scales (40 CFR Part 58).
The "10" in PM10 and the "2.5" in PM2.5 are not particle size limits; these numbers identify the particle size class (aerodynamic equivalent diameters in microns) collected with 50% mass efficiency by certified sampling equipment. The maximum particle size collected by PM10 samplers is about 50 microns aerodynamic equivalent diameter; the maximum particle size collected by PM2.5 samplers is about 6 microns aerodynamic equivalent diameter (40 CFR Part 53).

Source: California Air Resources Board 1991. State and National Ambient Air Quality Standards (ARB Fact Sheet 39). 40 CFR Parts 50, 53, and 58.

hour ozone standard (an 8-hour average of 0.08 ppm), and adopted new fine particle ($PM_{2.5}$) standards (15 micrograms per cubic meter as an annual average and 65 micrograms per cubic meter as a 24-hour average)(Table 3-19).

3.10.4 Existing Conditions

Ambient Air Quality Conditions

Ozone, carbon monoxide, and particulate matter are the major pollutants of concern in the Bay Area, with sulfur dioxide being of concern in areas near major refineries. Ozone is a secondary pollutant that is characterized by regional occurrence episodes. Pollutant transport patterns within the Bay Area influence the frequency and magnitude of ozone episodes affecting particular communities. Carbon monoxide is a primary pollutant characterized by rather localized episodes affecting limited areas. Suspended particulate matter is a mixture of primary and secondary pollutants and thus tends to have a rather indistinct pattern of regional and localized episodes.

The most frequent episodes of high ozone concentrations in the Bay Area tend to occur in the Livermore Valley, South Bay, and Santa Clara Valley. High ozone concentrations are much less frequent in the northern portion of the Bay Area. Carbon monoxide concentrations tend to be highest in heavily urbanized areas, particularly in areas with heavy surface street traffic and major parking facilities. Ozone and carbon monoxide concentrations are monitored at a number of locations in the San Francisco Bay Area, including the county office complex at Tuolumne Street and Solano Avenue in Vallejo. PM_{10} was not monitored at the Vallejo station until recently. Table 3-20 summarizes recent monitoring data for ozone, carbon monoxide, PM_{10}.

Table 3-20 indicates that the Federal ozone standard was exceeded at the Vallejo monitoring station only once between 1990 and 1996, but the more stringent state ozone standards were exceeded 21 times during that period. A similar pattern of violations has occurred at the Fairfield and Pittsburg monitoring stations. Federal and state carbon monoxide standards were exceeded in Vallejo only once between 1990 and 1996.

PM_{10} monitoring data from the northern part of the Bay Area indicate few exceedances of the Federal standard. In contrast, the more stringent state PM_{10} standard is frequently exceeded. Historically, TSP concentrations monitored in Vallejo were similar to TSP concentrations monitored in other nearby communities. This similarity in TSP concentrations suggests that PM_{10} concentrations in Vallejo are probably similar to PM_{10} levels elsewhere in the northern part of the Bay Area. PM_{10} monitoring data from Napa are included

TABLE 3-20
SUMMARY OF RECENT AIR MONITORING DATA FOR THE STUDY AREA

Monitoring Station	Air Quality Indicator	Year 1990	1991	1992	1993	1994	1995	1996
	OZONE							
Vallejo	Peak 1-hour value (ppm)	0.11	0.11	0.10	0.11	0.10	0.13	0.11
	Days above Federal standard (0.12 ppm)	0	0	0	0	0	1	0
	Days above state standard (0.09 ppm)	2	2	1	3	2	6	5
	CARBON MONOXIDE							
Vallejo	Peak 1-hour value (ppm)	12.0	13.0	11.0	12.0	9.0	7.0	6.0
	Peak 8-hour value (ppm)	9.0	9.6	6.6	7.9	6.4	5.3	5.0
	Days above Federal 8-hour standard (9.0 ppm)	0	1	0	0	0	0	0
	Days above state 8-hour standard (9.0 ppm)	0	1	0	0	0	0	0
	INHALABLE PARTICULATE MATTER, PM_{10}							
Napa - Jefferson St.	Peak 24-hour value ($\mu g/m^3$)	117	100	74	70	86	69	57
	Annual geometric mean ($\mu g/m^3$)	27.9	27.9	23.9	22.6	21.2	17.5	18.2
	Annual arithmetic mean ($\mu g/m^3$)	34.1	33.0	27.0	25.6	23.3	20.3	19.9
	Number of 24-hour samples	61	60	61	61	59	61	61
	% of samples above Federal standard (150 $\mu g/m^3$)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	% of samples above state standard (50 $\mu g/m^3$)	13.1%	18.3%	3.3%	4.9%	3.4%	1.6%	1.6%
Vallejo	Peak 24-hour value ($\mu g/m^3$)					63	59	49
	Annual geometric mean ($\mu g/m^3$)					23.1	16.4	15.2%
	Annual arithmetic mean ($\mu g/m^3$)					26.3	18.7	17.3%
	Number of 24-hour samples					9	61	61
	% of samples above Federal standard (150 $\mu g/m^3$)					0.0%	0.0%	0.0%
	% of samples above state standard (50 $\mu g/m^3$)					11.1%	1.6%	0.0%

Notes: ppm = parts per million by volume.
$\mu g/m^3$ = micrograms per cubic meter.
Federal 1-hour ozone standard is 0.12 ppm; state 1-hour ozone standard is 0.09 ppm.
Federal 1-hour carbon monoxide standard is 35 ppm; state 1-hour carbon monoxide standard is 20 ppm.
Federal 8-hour carbon monoxide standard is 9 ppm; state 8-hour carbon monoxide standard is 9.0 ppm.
Federal PM_{10} standards: 50 $\mu g/m^3$, annual arithmetic mean; 150 ug/m^3, 24-hour average.
State PM_{10} standards: 30 $\mu g/m^3$, annual geometric mean; 50 ug/m^3, 24-hour average.
24-hour PM_{10} samples are collected approximately once every 6 days. Other pollutants are monitored continuously (except for instrument calibration and maintenance periods).

Source: California Air Quality Data, Volumes XXII-XXVII (Annual Summaries, 1990-1996).

in Table 3-20 because Napa and Vallejo had similar TSP levels and therefore PM_{10} data from Napa are probably representative of PM_{10} concentrations in Vallejo.

Emission Sources at Mare Island

Preclosure operations at Mare Island Naval Shipyard included numerous stationary and mobile emission sources. Stationary sources include boilers and power plants fueled by natural gas or fuel oil; fuel oil storage; gasoline dispensing; abrasive blasting; cleaning, stripping, and degreasing operations; and painting operations. A plating shop also was used during the preclosure period. Mobile source emissions at Mare Island Naval Shipyard included gasoline and diesel-fueled vehicles, locomotives, and marine vessels.

The 1990 emission inventory used for the Federally required state implementation plan estimated Mare Island Naval Shipyard stationary source emissions as 40 tons per year of organic compounds, 230 tons per year of nitrogen oxides, 4 tons per year of sulfur dioxide, 22 tons of carbon monoxide, and 62 tons of particulate matter (BAAQMD 1993a). Stationary sources covered by Bay Area Air Quality Management District (BAAQMD) permits had estimated 1992 emissions totaling 39 tons per year of organic compounds, 268 tons per year of nitrogen oxides, 9 tons per year of sulfur dioxide, 33 tons per year of carbon monoxide, and 68 tons per year of particulate matter (BAAQMD 1993b).

Prior to closure, Mare Island Naval Shipyard had approximately 410 stationary emission sources. A listing of the various sources is included in Appendix H. Almost half of the stationary sources operated under air quality permits issued by the BAAQMD. The remaining sources were classified as exempt sources that did not require individual permits. Table 3-21 summarizes the disposition and status of these sources and their associated permits. As shown in Table 3-21, some permits held by the Navy have been cancelled, with the resulting emission reductions banked to meet future permit requirements at DoD facilities. Emission reduction credits and emissions banking are discussed briefly in Section 3.10.5

Prior to closure, mobile emission sources at Mare Island Naval Shipyard included government-owned vehicles, industrial equipment (such as forklifts and heavy trucks), heavy equipment used for grading and construction, grounds maintenance tractors, 4 locomotives, 46 small boats, occasional marine vessels that visited the shipyard, and private vehicles used by military personnel and shipyard employees. None of these mobile sources required permits from the BAAQMD. Annual emissions from these mobile sources were estimated to be 259 tons per year of reactive organic compounds, 397 tons per year of nitrogen oxides, 1,823 tons per year of carbon monoxide, 50 tons per year of sulfur oxides, and 60 tons per year of PM_{10}. These mobile source emissions will be held by the Navy in reserve and made available for use for future conformity determinations according to Navy policy. Future uses

TABLE 3-21
STATIONARY EMISSION SOURCE STATUS AT MARE ISLAND

Sources and Disposition Status	Number of Sources
Number of stationary sources	
With BAAQMD permits	192
Exempt from permit requirements	218
Total	410
Permits used by the Navy	
Banked to support DOD needs	11
Cancelled, equipment moved to other bases	9
Retained for contingency use	2
Total used for DOD needs	22
Transferred to other agencies	
Transferred to interim lease tenants	60
Transferred to LRA	225
Total transferred to other parties	285
Permits cancelled, not needed by DOD or LRA	103

Source: US Navy

may include transfer to satisfy conformity offset requirements at another DOD facility within the BAAQMD such as Travis Air Force Base, use by another Federal agency for conformity purposes, or reuse of Mare Island where a Federal approval is necessary subject to a conformity determination.

Mare Island Naval Shipyard also maintained a radionuclide emissions program. This program, governed by 40 C.F.R. 61, Subpart I, applies to those Federal facilities not owned by the Department of Energy. The regulations specify public exposure limits for radionuclide emissions originating at the shipyard. The shipyard maintained compliance with these regulations, and Navy sources of potential radionuclide emissions are now gone.

3.10.5 Regulatory Considerations

Air pollution control programs were established in California prior to the enactment of Federal requirements. Responsibility for air quality management programs in California is divided between the Air Resources Board (ARB), as the primary state air quality management agency, and air pollution control districts, as the primary local air quality management agencies. Federal Clean Air Act legislation in the 1970s resulted in a gradual merger of local and Federal air quality programs, particularly industrial source air quality permit programs.

The roles and responsibilities of both ARB and local air pollution control districts have been expanded by the California Clean Air Act of 1988. Local

air pollution control districts also have been given added responsibility and authority to adopt transportation control measure programs and emission reduction programs for indirect and areawide emission sources.

Air Quality Permits

The BAAQMD has the primary air quality permit authority throughout the San Francisco Bay Area. Permit authority is derived from a combination of state and Federal legislation and can be categorized into construction or installation authorizations for individual pieces of equipment and permits for continued operation of equipment and facilities.

In general, Federally required air quality permit programs have been integrated into the preexisting state and local permit program. This results in a 2-step permit process—an initial authority to construct (ATC) permit and a subsequent permit to operate (PTO). The new Federal operating permits (generally called Title V permits in reference to the applicable section of the 1990 Clean Air Act Amendments, 42 U.S.C. §7661 *et. seq.*, are issued to industrial facilities as a whole, and include conditions applicable to discrete emission sources within the facility. Title V operating permits generally will be valid for 5 years and can include provisions for minor variations in operational levels during that period.

When a stationary source is permanently taken out of service, its air quality permits are normally surrendered. BAAQMD regulations establish procedures for obtaining credit for the resulting reduction in emissions. These emission reduction credits (ERCs) can be formally registered and banked with the BAAQMD. Banked ERCs can be used later to meet emission offset requirements for other new stationary emission sources. ERCs can also be bought, sold, traded, or given to other parties to meet permit-related emission offset targets.

Federal Clean Air Act Conformity Process

Section 176(c) of the Clean Air Act (CAA), 42 U.S.C. §7506(c), requires Federal agencies to ensure that their actions are consistent with the Clean Air Act and with Federally enforceable air quality management plans. US EPA has promulgated separate rules that establish conformity analysis procedures for transportation-related actions and for other general Federal agency actions. The conformity review process is intended to ensure that Federal agency actions will not cause or contribute to new violations of any Federal ambient air quality standards, will not increase the frequency or severity of any existing violations of Federal ambient air quality standards, and will not delay the timely attainment of Federal ambient air quality standards.

A formal conformity determination is required for Federal actions occurring in nonattainment or maintenance areas when the total direct and indirect emissions of nonattainment pollutants (or their precursors) exceed specified thresholds. The Federal nonattainment and maintenance pollutants subject to conformity analyses in the San Francisco Bay Area include ozone precursors (reactive organic compounds and nitrogen oxides) and carbon monoxide. Applicable threshold levels for Federal actions in the San Francisco Bay Area are 100 tons per year of reactive organic compounds, 100 tons per year of nitrogen oxides, and 100 tons per year of carbon monoxide.

The emissions accounting and other aspects of the conformity analysis are limited to those emissions that are reasonably foreseeable and that the Federal agency might influence or control through some form of continuing program responsibility.

Several categories of Federal agency actions are identified in the general conformity rule as actions that are presumed to result in emissions below the threshold level. Transfers of ownership, interests, and titles in land, facilities, real property, or personal property to other public agencies or to private parties are presumed to have emissions below the threshold level because the agency transferring the facilities or property will not retain responsibility or control over subsequent activities.

However, reuse of Mare Island by a Federal agency might require that agency to prepare a formal conformity determination if the use generated significant direct or indirect air pollutant emissions.

3.10.6 Air Quality Planning in the Bay Area

The Federal CAA, 42 U.S.C. §7401 *et seq.*, requires each state to develop, adopt, and implement a state implementation plan (SIP) to achieve, maintain, and enforce Federal air quality standards throughout the state. These plans must be submitted to and approved by the US EPA. In California, the state implementation plan consists of separate elements for different regions of the state. SIP elements generally are developed on a pollutant-by-pollutant basis whenever 1 or more air quality standards are being violated.

Local councils of governments and air pollution control districts have had the primary responsibility for developing and adopting the regional elements of the California SIP. In the San Francisco Bay Area, SIP document preparation has been a coordinated effort involving 3 regional agencies—the BAAQMD, the ABAG, and the MTC.

Federal Requirements

The Federal CAA also imposes deadlines for achieving the Federal ambient air quality standards. These deadlines vary according to the severity of existing air quality problems. The San Francisco Bay Area was recently reclassified from a moderate nonattainment area to a maintenance area for the Federal ozone standard. The urbanized portions of the San Francisco Bay Area are presently categorized as moderate nonattainment areas for the Federal carbon monoxide standards. The Bay Area is currently not classified for the Federal PM_{10} standard.

State Requirements

The California Clean Air Act of 1988, Cal. Health and Safety Code §39607 note (West 1996), requires air pollution control districts and air quality management districts to develop air quality management plans for meeting state ambient air quality standards for ozone, carbon monoxide, sulfur dioxide, and nitrogen dioxide. The state ARB is responsible for developing a plan for meeting state PM_{10} standards.

The California Clean Air Act does not set specific deadlines for achieving state air quality standards. Instead, attainment is required "as expeditiously as practicable," with various mandated emission control program requirements based on the nonattainment classification for ozone and carbon monoxide. The entire San Francisco Bay Area is classified as a moderate nonattainment area for the state ozone standard. Urbanized portions of the Bay Area were previously classified as moderate nonattainment areas for the state carbon monoxide standard but now are classified as having attained the state standard. The Bay Area is also classified as a nonattainment area for the state PM_{10} standard.

Vallejo General Plan Air Quality Element

Vallejo has adopted an air quality element as part of the city's general plan. The primary goals of the air quality element are to improve Vallejo's air quality, to reduce air quality impacts associated with future development in Vallejo, and to make a local contribution toward improving regional air quality.

The Vallejo air quality element includes several policies to support the goals noted above. Most of these policies focus on land use patterns and transportation systems. The major policies of the Air Quality Element include the following:

- Develop a balanced transportation system in Vallejo that provides opportunities for non-auto travel by promoting pedestrian, bicycle, and transit modes of travel.
- Balance jobs and housing in future development to provide Vallejo residents the opportunity to work within Vallejo and to reduce long distance commuting both to and from Vallejo.
- Reduce carbon monoxide levels in downtown Vallejo by promoting transportation system management for new development, by promoting bicycle, pedestrian, and transit modes of travel in new downtown development, and by installing signal/road improvements that reduce vehicle idling. Drive-up windows should be discouraged in new development in the central city area.
- Promote high density development and infill development in those portions of Vallejo served by transit.
- Promote mixed land use development.
- Adopt a transportation system management (TSM) ordinance for major existing and future employers in Vallejo.
- Require air quality mitigation for new development not amenable to TSM methods. As part of the environmental review process, these types of uses should be required to provide air quality mitigation by providing funding for off-site improvements to improve air quality.
- Use project siting to reduce air pollution exposure of sensitive receptors.
- Cooperate with regional air quality planning agencies in developing and implementing regional air quality strategies.
- Support expansion and improvement of regional transit systems, ferry systems, and regional ridesharing programs.
- Encourage energy conservation measures in all new development and energy conserving retrofitting existing buildings wherever feasible.

3.11 NOISE

Sound travels through the air as waves of minute air pressure fluctuations caused by some type of vibration. In general, sound waves travel away from the noise source as an expanding spherical surface. The energy contained in a sound wave is consequently spread over an increasing area as it travels away from the source. This results in a decrease in loudness at greater distances from the noise source.

Sound level meters measure the actual air pressure fluctuations caused by sound waves, with separate measurements made for different sound frequency ranges. These measurements are reported using a decibel (dB) scale. Decibel scales are a logarithmic index based on a ratio of the actual pressure fluctuations generated by sound waves compared to a standard reference pressure value.

Most sounds consist of a broad range of sound frequencies. Because the human ear is not equally sensitive to all frequencies, a large number of frequency weighting schemes have been used to develop composite decibel scales that approximate the way the human ear responds to noise levels. The "A-weighted" decibel scale (dBA) is the most widely used for this purpose. The A-weighted scale significantly reduces the measured pressure level for low frequency sounds while slightly increasing the measured pressure level for some high frequency sounds.

Many different noise measurement scales have been developed in the last 30 years, and several different noise scales are used in land use compatibility guidelines applicable to the Mare Island Naval Shipyard Reuse Plan. Appendix H presents additional background discussions of noise terminology and noise measurement scales.

The attenuation of noise levels with increasing distance from the noise source results in a fairly limited region of influence for noise issues. For this EIS/EIR, the overall region of influence is the City of Vallejo. A more localized region of influence is appropriate for some discrete noise sources; such localized areas of influence are generally within half a mile of the noise source.

3.11.1 Existing Noise Conditions

The major noise sources under preclosure conditions at Mare Island Shipyard included vehicle traffic, rail operations, crane operations, industrial facility operations, and the rifle range. The rifle range is between 2 existing residential developments and has been a source of occasional noise complaints. No noise monitoring data are available for Mare Island

Shipyard, but the noise element of the Vallejo General Plan presents some data from spot monitoring of noise levels conducted in 1974 in other parts of the city. Noise levels that are exceeded 10 percent of the time are referred to as L_{10} values. The noise element presents a map of areas expected to experience L_{10} levels above 60 dB under projected 1985 traffic conditions. Most of Vallejo is indicated to have a predicted L_{10} noise level above 60 dB.

3.11.2 Noise Level/Land Use Compatibility Guidelines

State Agency Guidelines

The California Department of Health Services (1987) has published guidelines for the noise element of local general plans. These guidelines include a noise level/land use compatibility chart that categorizes various outdoor community noise equivalent levels (CNEL) into as many as 4 compatibility categories (normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable), depending on land use. For many land uses, the chart shows overlapping CNEL ranges for 2 or more compatibility categories.

The state noise element guidelines chart identifies normally acceptable noise levels for low density residential uses as CNEL values below 60 dB. The normally acceptable range for high density residential uses is identified as CNEL values below 65 dB. For educational and medical facilities, CNEL values below 70 dB are classified as normally acceptable, but CNEL values of 60 to 70 dB are identified as conditionally acceptable. For office and commercial land uses, CNEL values below 70 dB are considered normally acceptable, while CNEL values of 67.5 to 77.5 are categorized as conditionally acceptable.

The California Department of Housing and Community Development has adopted noise insulation performance standards for new hotels, motels, and dwellings other than detached single-family structures, 24 California Administrative Code T25-28, 25 C.C.R. §4370. These standards require that "interior community noise equivalent levels (CNEL) with windows closed, attributable to exterior sources, shall not exceed an annual CNEL of 45 dB in any habitable room."

Local Agency Guidelines

In California, cities and counties are required to adopt a noise element as part of their general plan. The noise element in the Vallejo General Plan was prepared in 1974 and identifies traffic noise as the dominant noise problem in Vallejo. Daytime and nighttime L_{10} noise levels are used in the noise element as criteria for evaluating land use compatibility. Separate

compatibility criteria are established for outdoor and indoor areas (Table 3-22).

TABLE 3-22
CITY OF VALLEJO NOISE CRITERIA

Zone	Period	L_{10} Criteria	
		Outdoors	Indoors
Rural Residential	7 AM - 10 PM	55	45
	10 PM - 7 AM	55	45
Other Residential	7 AM - 10 PM	60	50
	10 PM - 7 AM	60	50
Medical	7 AM - 10 PM	55	45
	10 PM - 7 AM	55	45
Street-oriented Commercial	7 AM - 10 PM	75	65
	10 PM - 7 AM	75	65
Industrial and Heavy Commercial	7 AM - 10 PM	75	65
	10 PM - 7 AM	75	65
Other Commercial	7 AM - 10 PM	70	60
	10 PM - 7 AM	70	60

Notes: L_{10} = noise level (dBA) exceeded 10% of the time.

Exterior criteria should be applied at the property line, and interior criteria should be applied to the room nearest the noise source.

Source: Vallejo 1990c

Daytime and nighttime L_{10} values are not easily correlated with equivalent noise levels L_{eq} or CNEL values. Although a 3 dB reduction is sometimes used to convert L_{10} values to L_{eq} values, actual noise monitoring data often show a significant variability in the relationship.

Table 3-23 presents an approximate conversion of L_{10} land use compatibility criteria values into equivalent L_{eq} and CNEL values. In general, the L_{10} criteria presented in the Vallejo noise element are reasonably consistent with the CNEL criteria in the state general plan guidelines. Vallejo's L_{10} criteria for noise-sensitive land uses (medical and residential land uses) are somewhat more stringent than the CNEL criteria in the state general plan guidelines.

The Vallejo General Plan contains the following policies concerning noise conditions and problems:

- Truck routes should be on streets that are abutted by commercial development and should be well signed.

TABLE 3-23
ESTIMATED CNEL EQUIVALENTS OF L_{10} LAND USE COMPATIBILITY CRITERIA

Land Use Category	Time Period	Outdoor L_{10} Criteria	L_{10}-to-Leq Adjustment Factor	Traffic Pattern Leq Adjustment	Estimated Leq	CNEL
Rural Residential	Peak Daytime	55	.2	0	53	
	Off-Peak Daytime		-2	-4	49	
	Peak Nighttime	55	-1	-7	47	
	Off-Peak Nighttime		0	-12	43	52
Medical	Peak Daytime	55	.2	0	53	
	Off-Peak Daytime		-1	-4	50	
	Peak Nighttime	55	0	-7	48	
	Off-Peak Nighttime		1	-12	44	53
Urban Residential	Peak Daytime	60	-3	0	58	
	Off-Peak Daytime		-1	-4	55	
	Peak Nighttime	60	0	-7	53	
	Off-Peak Nighttime		0	-12	48	58
Street-Oriented Commercial	Peak Daytime	75	-4	0	72	
	Off-Peak Daytime		-2	-4	69	
	Peak Nighttime	75	0	-7	68	
	Off-Peak Nighttime		0	-12	63	72
Other Commercial	Peak Daytime	70	-4	0	66	
	Off-Peak Daytime		-2	-4	64	
	Peak Nighttime	70	0	-7	63	
	Off-Peak Nighttime		0	-12	58	67
Industrial/ Heavy Commercial	Peak Daytime	75	-4	0	71	
	Off-Peak Daytime		-2	-5	68	
	Peak Nighttime	75	0	-7	68	
	Off-Peak Nighttime		0	-12	63	72

Notes: Outdoor L_{10} criteria are from Table 3-22.
L_{10}-to-L_{eq} adjustment factor based on review of traffic noise monitoring data from various communities.
Traffic pattern L_{eq} adjustment generalized from noise monitoring data from various communities.
CNEL calculations assume 2 daytime peak hours, 10 daytime off-peak hours, 3 evening off-peak hours, 1 nighttime hour, and 8 nighttime off-peak hours.

Developed by: Tetra Tech

- Noise abatement walls, deeper setbacks, and landscaped berms should be considered for properties that back up to a major traffic source, such as I-80.

- The maximum L_{10} noise levels for exterior and interior environments shown in Table 3-22 should be applied to new construction. The exterior criteria should be applied at the property line, and the interior criteria should apply to the room nearest the noise source. If the building is not air conditioned, the interior criteria should apply with the windows open.

- No person should produce noise that exceeds the ambient noise level (L_{50}) by more than 5 dBA at the nearest property line.

- Noise from construction and maintenance equipment should be limited to the levels shown in Table 3-24.

TABLE 3-24
CONSTRUCTION EQUIPMENT NOISE LIMITS

Equipment	Maximum Allowable Peak Noise Level at 50 feet (dBA)
Front loaders, backhoes, dozers	75
Other earthmoving equipment (tractors, graders, trucks, scrapers, pavers)	80
Materials-handling equipment (concrete mixers, cranes, concrete pumps, derricks)	75
Stationary equipment (pumps, generators, compressors)	75
Pile drivers	95
Jack hammers	75
Other impact equipment (rock drills, pneumatic tools)	80
Other equipment (saws, vibrators)	75

Source: Vallejo 1994c

3.12 UTILITIES

This section is an overview of the utilities on Mare Island, including the water distribution system, wastewater system, solid waste management, telephone service, gas and electric service, and stormwater system. Information on the different utilities was obtained from the Mare Island Reuse Plan, 1980 and 1989 Master Plans, and personal communications with employees of the Navy, Vallejo, and utility companies.

There are no regulations governing utilities as 1 entity; the different utilities are subject to different local, state, or Federal regulations. These may be municipal codes, permitting requirements, legislation, or local, state, or Federal agency requirements. The regulations specific to the various utilities on Mare Island are discussed at the end of this section. Figures of the main utility systems are in Appendix I.

The utilities described in this section are those that are or were found on Mare Island. Roosevelt Terrace and the Main Entrance, located in Vallejo, received and will receive services in the same manner as other Vallejo utility users. On Mare Island, Vallejo provided potable water distribution. The Vallejo Sanitation and Flood Control District provided sanitary sewer and storm drainage services, Pacific Bell provided telephone services and Pacific Gas & Electric (PG&E) supplied natural gas. Electrical power was provided by the Western Area Power Administration (WAPA) over PG&E lines. The ROI for the utilities discussion is Mare Island and the surrounding bodies of water.

Utility service was provided by Public Works Center San Francisco Bay (PWC) to both military and civilian activities. The Navy is operating some utility systems at the minimal levels necessary to sustain a caretaker level of activity, some systems have been shut down, and some systems have been sold. Caretaker status of utilities is provided under the individual utility descriptions.

3.12.1 Water Distribution System

The Mare Island Water Distribution System supplies all domestic and most industrial needs of Mare Island, including drinking water, irrigation, and fire protection. The potable water system is considered to be in only fair condition due to the age of most of its pipelines. Many sections of the piping system have been identified for replacement, notably the piping on the southern portion of Mare Island. The shipyard's internal fire protection system does not meet Vallejo water storage requirements. At least 2 of the 7 water storage tanks may need replacing due to deterioration. Although

there are some water meters on the base, many are inoperable, and few were read.

Potable Water System

Mare Island receives potable water from Vallejo through 2 transmission mains. A concrete-encased, pile-supported 20-inch water main crosses the southern end of Mare Island Strait and terminates near Building 900. A 14-inch water main suspended from the causeway bridge crosses at the northern end of the island and connects to the pump station at G Street and California Avenue. Appendix I, Figure I-1 depicts the Mare Island potable water supply and distribution system. Nearly all potable water lines on Mare Island are on surplus land. Exceptions are the line that runs to the overflow pond near the Industrial Waste Treatment Plant (IWTP) and distribution lines on the westernmost side of Farragut Village (on state reversionary land), and lines on the Mare Island property being transferred to other Federal agencies.

Sampling for lead and copper in drinking water is outlined in the Clean Water Act (CWA), 33 U.S.C. §1251, and the Safe Drinking Water Act (SDWA), 42 U.S.C. §300f, *et seq.* Testing of Mare Island's drinking water is an ongoing program. Prior to closure the Navy performed testing of drinking water; testing is now done by Vallejo. Testing of drinking water at residential and industrial sites resulted in readings well below the legal limits for constituents such as metals and dissolved solids (US Navy 1994c).

Mare Island water demand ranged from 2.3 million gallons per day (mgd) during the winter to 3.3 mgd during the summer. The total system delivery capacity is 6.2 mgd. The system is automatically controlled, with the exception of Tank 645 and chlorine feed to the water storage tanks (US Navy 1994a).

The potable water system consists of approximately 62 miles of distribution piping, 7 water storage tanks (3 of the 7 are abandoned), 5 water pumping stations, 2 chlorination stations, water meters, backflow prevention devices, and valves and hydrants. The chlorination stations are out of service, as they were not cost-effective to repair. The distribution piping varies in size, composition, and age. Pipes range in size from 2 to 20 inches and are made of cast iron, galvanized iron, transite, and steel (US Navy 1989). All areas of the system sustain periodic leaks and ruptures due to corrosion of the lines with age and differential settlement in the low-lying areas where development has occurred in fill materials (US Navy 1989). The Navy has replaced sections of piping over the years and has identified other sections that need to be replaced, most notably the piping on the southern portion of

Mare Island. Little of the piping is less than 10 years old and most of it is older, possibly up to 45 years old (Vallejo 1994c).

The 4 water storage tanks and 3 abandoned water storage tanks on Mare Island are described in Table 3-25. There are 2 distinct pressure systems for the current water system. A pressure zone serving the elevated area along Club Drive and Young Drive operates from Tank 920. Tank 920 is in fair condition, but it is not known if preventive maintenance schedules have been adhered to for this tank. The rest of the island is served by the second pressure zone; Tanks 188B, 774, and 645 are connected to this zone. Tank 188B gravity feeds into this pressure zone, while storage from Tanks 774 and 645 must be pumped into the pressure zone. Tank 188B is in poor condition and requires replacement. Tanks 774 and 645 are below grade and their condition has not been monitored (US Navy 1989).

TABLE 3-25
POTABLE WATER STORAGE TANKS

Tank Number	Location	Capacity (mg)	Operating Elevations (ft)	Condition
774	Pampano St. & Sargo Ave.	3.0	110-130	Not Available
920	Club Dr. near Bldg. 1324	0.12	205-245	Fair
188A	On Golf Course	2.0	140-172	Abandoned
188B	On Golf Course	2.0	140-172	Poor
A254	Off Dillabough Rd.	0.175	NA	Abandoned
A255	Off Dillabough Rd.	0.175	NA	Abandoned
645	6th and Walnut St.	3.0	15-35	Not Available

Source: Vallejo 1994c, US Navy 1989

The shipyard's internal fire protection system does not meet Vallejo water storage requirements. In general, the city's fire flow requirements are equivalent to maximum requirements plus fire flow and should be available from gravity flow sources at adequate pressure. Water storage should provide 1 day's operation at maximum demand plus 2 hours fire flow. The Navy has supplemented the potable water system for fighting fires using saltwater pumps with diesel generators backing up the power. The saltwater pumping system is being converted to fresh water.

The 5 potable water pump stations are shown in Table 3-26. The causeway pump station boosts system pressure when pressure to the city's 14-inch main is low. Pump station 774 pumps water from the lower pressure zone to Tank 920 serving the upper pressure zone. Pump station 774 also boosts

system pressure in the lower zone and is in fair condition. Pump station 880, constructed in the last 10 years, is a dedicated fire protection station. Due to insufficient storage in Tank 920, pump station 880 provides the additional fire flow to the upper pressure zone. Pump station 645 is for emergency access of the water stored in Tank 645 under low pressure conditions. Pump station 188B serves the golf course irrigation system and is in fair condition.

TABLE 3-26
POTABLE WATER PUMP STATIONS

Pump Station ID	Location	No. of Pumps	Capacity (gpm)	Rating (psi)	Condition
Causeway	G St. and	2	3000	93	Not Available
	California St.	1	2400	70	
774	Pampano Ave.	2	350	70	Fair
	and Wasmuth St.	1	3000	70	
880	Club Dr. and Sargo Ave.	1	1000	143	Not Available
188B	On Golf Course	1	NA	NA	Fair
645	6th St. and Walnut St.	1	750	100	Poor

Source: Vallejo 1994c

Water meters monitor individual buildings, parts of buildings, or sections of the base. The water meters are located both inside and outside, depending on what they meter. Some of the meters are inoperable, and only some of the meters were read (Parsons 1994).

Backflow preventers protect the potable water system from cross connecting with other utility systems. Mare Island reportedly has 252 backflow preventers that were inspected monthly and functionally tested annually by PWC. A backflow protection and cross-connection survey was completed in October of 1994. This document provided an updated listing of known prevention devices and a compilation of potential cross connections and deficiencies found during the survey. The potable water system has isolation valves every 500 to 800 feet. The valves allow sections of piping to be shut down in emergencies, such as water main breaks, and are thought to be in fair condition, though they have not been tested in times of emergency (Vallejo 1994c). The potable water system contains a limited number of hydrants. Like the valves, the hydrants are thought to be in fair condition but have not been tested.

It is anticipated that the potable water system will be transferred to Vallejo when the Federal surplus land on Mare Island is conveyed. During the caretaker period, the Navy has a cooperative agreement with Vallejo to

provide potable water to Mare Island. Leased buildings are being metered, and tenants pay the city for their water consumption.

3.12.2 Wastewater System

Mare Island's wastewater system collects sanitary wastes. The sanitary sewer system is considered to be in poor condition due to significant inflow and infiltration problems resulting from age, lack of maintenance, and material failures due to ground subsidence.

The sanitary wastewater compliance programs are managed in accordance with the wastewater discharge permit and conditions issued by the Vallejo Sanitation and Flood Control District (VSFCD) in June 1994. This permit allows Mare Island to discharge sanitary waste into the VSFCD collection system. The permit was renewed annually, and any change in operations that significantly altered the quantity or quality of the discharge was reported to the VSFCD.

Sanitary Wastewater System

Sanitary sewage is not treated on Mare Island but it is collected by gravity sewers and lift stations. Collected sewage is then pumped through an 18-inch main that runs along the causeway to the VSFCD wastewater treatment plant on the southern Vallejo waterfront.

The sanitary wastewater system and VSFCD wastewater treatment plant are shown on Appendix I, Figure I-2.

The average daily flow of sanitary sewage sent to the VSFCD treatment plant was 1.5 mgd in 1993. During the rainy season, the peak flow exceeded the 7.5 mgd capacity of the influent meter and the maximum flow rate of 6.5 mgd allowed in the sewage service agreement with the VSFCD (Vallejo 1994c).

The sanitary system consists of 36 pump stations, an overflow pond, a chlorination station, and an emergency generation station (US Navy 1994a). The main trunk sewer, which serves the entire island, is in Railroad Avenue. It ranges from 12 inches at the northern and southern ends of the island to 27 inches at the main pump station. Lateral pipe branches that flow by gravity into the main trunk line range from 4 inches to 15 inches (Vallejo 1994c). The system was owned, operated, and maintained by the Navy Public Works Center San Francisco Bay. All system components are on surplus land, with the exception of the overflow pond, a force main and a gravity line that run to the pond, and gravity lines on the westernmost side of Farragut Village. These components are on state reversionary lands.

Most of the 20 pump stations, listed in Table 3-27, supplement the gravity flow system. Most pump stations are near the trunk line where the line is monitored for temperature, pH level, and hydrocarbon content as it is conveyed by pipe to the VSFCD treatment plant via the causeway. This data is telemetered to the VSFCD. The sewage pump stations all operate on automatic control.

TABLE 3-27
SANITARY WASTEWATER PUMP STATIONS ON MARE ISLAND

Pump Station ID	Location	No. of Pumps	Capacity (gpm)	Rating (hp)	Condition
DOM-1	Bldg. 653	2	400	7.5	Fair
DOM-2	Bldg. 857	2	1,070	7.5	Poor
DOM-3	Bldg. 859	2	NA	3	Fair
DOM-4	Bldg. 861	1	1,600	15	Fair
		3	4,600	60	
DOM-W	Bldg. 833	3	1,800	40	Good
DOM-5	Bldg. 863	2	650	7.5	Poor
DOM-6	Bldg. 865	2	850	10	Poor
DOM-7	Bldg. 914	3	460	20	Good
DOM-8	Bldg. 916	2	350	3	Good
DOM-9	Bldg. 918	2	600	10	Good
DOM-10	Bldg. M-37 (basement)	2		0.5	Good
DOM-12	Between Way No. 1 and No. 2	2	240	5	Good
DOM-16	9th St. and Klein	2	315	5	Good
DOM-17	South of Bldg. 658	1		3	Good
DOM-18	South side of Bldg. H-79	2		1.5	Good
SPS-1	West side of Pier 53	2	300	7.5	No Power
SPS-2	West side of Pier 55	2	300	7.5	No Power
SPS-3	Northeast corner of Pier 56	2	300	7.5	No Power
SPS-4	Q St. West of Pier 56	2	250	7.5	Good
SPS-5	North of Pier 35	2	82.3	3	NA

Source: Vallejo 1994c

When the wastewater flow exceeded the capacity of DOM-4, it was diverted to DOM-W and pumped to the overflow pond near the IWTP. The overflow pond holds approximately 1.6 million gallons of wastewater. Manually operated gates allow wastewater to return by gravity to DOM-4

once pump station capacity is available. The overflow pond needs maintenance to repair holes in the lining.

The sanitary wastewater system is considered to be in poor condition due to significant inflow and infiltration. The system received no regular maintenance or cleaning, and repairs were made only at times of failure. Portions of the system are in excess of 60 years old (Vallejo 1994c), and subsidence and corrosion have resulted in joint separation and material failure (US Navy 1994c). The sewage system at the Naval Annex at the southern end of the island has been taken out of service due to oil infiltration from the ground (US Navy 1994c).

Upon conveyance of Federal surplus property at Mare Island, the sanitary wastewater system on Mare Island will be transferred to the Vallejo Sanitation and Flood Control District. The Navy has a cooperative agreement with Vallejo to provide sanitary wastewater services to Mare Island during the caretaker period prior to conveyance.

3.12.3 Solid Waste Management

Collection and Disposal of Solid Waste

A solid waste landfill was operated at Mare Island until 1988. That 30-acre unlined facility, which is on state reversionary land, is now part of the shipyard's Installation Restoration Program. Repairs to the landfill cap were made in 1994, and inspection and maintenance was performed by the Navy until closure. From 1988 to 1995, municipal solid wastes from Mare Island were taken to the American Canyon Landfill, about 10 miles east of the site, for disposal. This landfill was closed in 1995 and was replaced by a transfer station, located off Route 29 in the City of American Canyon. Solid waste collected at the transfer station is shipped to a landfill in Roosevelt, Washington.

In 1993, Mare Island disposed of 5,500 tons of municipal solid wastes down from 7,500 tons in 1990. In 1993, 5,060 tons of materials were recycled. This high recycling rate can be attributed to the high quantity of scrap metal recycling from the Mare Island industrial complex.

Solid waste generated by Mare Island prior to 1995 was transported off-base by a private contractor to the nearby American Canyon Landfill. The PWC maintained the disposal contract and was responsible for adhering to the standards set forth by the landfill. Mare Island's closed landfill is being addressed under the Installation Restoration Program. Compliance of the landfill cap with RCRA post-closure requirements will depend on inspection and maintenance by the caretaker organization.

Solid waste was collected from residential units and offices in refuse containers stationed throughout the shipyard. The containers were emptied by a private trash hauler (Industrial Carting) under contract to PWC. The private hauler furnished the containers and maintained or replaced them as needed. The hauler used a shed at the shipyard to store and repair the containers. The hauler stored and maintained collection vehicles off-island.

Under caretaker status, a private contractor is still collecting solid waste from Navy operations. Tenants arrange for their own solid waste disposal. After conveyance, the city's franchise for solid waste disposal will extend to Mare Island.

Solid Waste Management Plan

Mare Island Naval Shipyard's Solid Waste Management Plan complied with Federal, state, and local environmental laws and regulations to reduce the volume of solid waste disposed of in landfills. This plan established and defined the operating programs that would reduce waste streams, prevent pollution, and conserve material resources.

Recycling

Mare Island operated a comprehensive recycling program serving the residential, commercial, and industrial sectors of the shipyard. Materials separated for recycling included scrap metal, office paper, newspaper, cardboard, aluminum cans, glass, plastics, scrap wood, and other waste items.

Under caretaker status the primary recyclable material generated is paper. After conveyance, the city's franchise for recycling will be extended to Mare Island.

3.12.4 Telephone Service

Mare Island had 2 separate telephone systems, 1 provided by Pacific Bell that served the residential customers and the Navy Consolidated Area Telephone System (CATS), and 1 provided by 2 telephone switches and maintained by AT&T, that served the administrative and industrial areas. Both systems are in excellent condition. The CATS system was expensive to maintain due to its military usage requirements. The telephone system at Mare Island is outlined in Figure I-3.

Pacific Bell

The Navy owned the telephone infrastructure on Mare Island, through which Pacific Bell provided telephone service. The Pacific Bell telephone cables cross Mare Island Strait through an underwater conduit below the causeway bridge and enter Mare Island at Building 605A. Pacific Bell delivered service to the AT&T switches in Building 605A, as well as to the residences throughout Mare Island.

A 1,500-pair cable served both housing and pay telephones. Residential telephone service was served directly by Pacific Bell on a separate cable plant from those that served the CATS system. Pacific Bell provided service and maintenance to the minimum point of entry, which is the exterior of each residence. The resident was responsible for interior wire and telephones.

Pay phones were provided by Sprint, which contracted to Pacific Bell for service and maintenance. They were served primarily by a new CATS cable, though some old Pacific Bell cable was still in place. Mare Island Morale, Welfare, and Recreation (MWR) owned the pay phones and collected the revenue.

CATS

The CATS telephone system at Mare Island, installed in 1992, was one of the most advanced systems within the Department of Defense. The system has a capacity of approximately 15,000 lines. The CATS telephone system is the property of the Naval Computer and Telecommunications Station and is under a contract that terminates in February 1999.

The entire telephone system infrastructure on Mare Island, is in the process of being sold to GST, a local service provider. GST is operating and maintaining the system through a licensing agreement with the Navy until the sale is finalized and is collecting revenue from Navy and tenant activities. GST has performed surveys to establish easement boundaries, which will exist as a condition of the conveyance out of Navy ownership.

3.12.5 Gas and Electric Service

PG&E distributed gas and electric service to Mare Island Naval Shipyard. Natural gas was purchased from the Defense Logistics Agency (DLA) and transported by PG&E. The natural gas system is in good condition and provided Mare Island with gas for space heating and hot water. Hydroelectric power was purchased from the Western Area Power Administration of the Department of Energy (DOE). The overall condition of the electrical system is very good, with the exception of the overhead

distribution system in the Mare Island housing area, which needs replacement.

Gas System

Natural gas use at the shipyard declined gradually in the years prior to closure. In 1994, total base natural gas usage was approximately 629,300 therms per month. Primary gas uses were for space heating, hot water, and some industrial furnace operations. Gas also was used in the central power plant to power the steam distribution system that provided heating for most of the base's administrative and industrial facilities.

Mare Island received natural gas from PG&E at 100 pounds per square inch gauge (psig) float (within a range up to 100 psig) through a 10-inch main that crosses the Mare Island Strait at the causeway bridge. PG&E metered gas consumption at the main entrance as well as at Building 121, the steam plant. The difference in readings between the 2 meters was called "yard gas." Figures I-4a and I-4b illustrate the natural gas distribution system at Mare Island. The gas system is entirely within surplus land, with the exception of piping on the westernmost side of Farragut Village.

The gas distribution system consists of 8-inch and smaller mains that cross connect to form loops. Mains are sectionalized at valves to permit isolating and bypassing line failures to limit service interruptions. Pressure reducing stations throughout the shipyard reduce gas pressure from 100 psig to 30 psig. All distribution piping is operated at 30 psig; pressure regulators installed at building service lines reduce pressures to the levels required by the heating equipment in the building.

The gas distribution piping is generally in good condition (Vallejo 1994c); most of the system is less than fifteen years old. Aboveground lines are steel, while underground lines are mainly polyethylene inside polyethylene-coated steel pipes. Steel lines are cathodically protected by current-impressed or sacrificial anode type systems, although the rectifier systems have not been maintained or inspected in recent years and may not be completely functional (Vallejo 1994c).

The natural gas system on Mare Island has been sold to the City of Pittsburg municipal power company under the name of Island Energy. Island Energy is operating and maintaining the system under a licensing agreement with the Navy until the sale is finalized and is collecting revenues from Navy and tenant activities. Easements for the system are included as a condition of conveyance out of Navy ownership.

Electric System

Electrical power is delivered to Mare Island via a dual 115-kilovolt (kV) transmission line from the Ignacio substation in Marin County. This power is stepped down to 12 kV by 2 parallel 20 megawatt (MW) transformers at Substation H.

Power is distributed to shipyard users from Substation H by a series of loops connecting a network of 26 major and 18 minor 12-kV switch stations and substations located throughout the island. The overall system uses a network configuration, utilizing multiple feeds to all substations for reliability and flexibility. The electrical system is outlined in Figure I-5. All substations and switch stations and 12-kV power lines are on surplus land. Parts of the distribution system at the westernmost side of Farragut Village may be on state reversionary lands.

The overall condition of the electrical system is very good. Much of the present distribution system was built and upgraded after 1975. The primary electrical distribution system has proven to be reliable, with few failures in the past 10 years. System coordination and short circuit studies have been continuously updated to reflect current conditions.

There are areas of the system in need of upgrading to comply with current electrical standards. Most underground electrical vaults have water intrusion from tidal waters, which presents water disposal problems when work must be done in these vaults. The water intrusion poses no indirect safety or operational problem since the cable used is intended for permanent immersion in water. The overhead distribution system in the Mare Island housing area is beyond the point of economical repair and requires replacement.

Recent improvements include additional substations to serve the north waterfront area and increased capacity of existing substations and feeders (1991), the alternate transmission line (1988), upgrading of older 2.3-kV systems (1982-1993), and eliminating over 200 PCB-filled transformers. (1982-1993). The last PCB-filled (500+ ppm) transformers will be replaced by October 1998. About 20 PCB-contaminated (50-499 ppm) transformers remain on Mare Island, with no current plans for replacement or removal.

The electrical system on Mare Island has been sold to the City of Pittsburg municipal power company under the name of Island Energy. Island Energy is operating and maintaining the electrical system under a licensing agreement with the Navy until the sale is finalized and is collecting revenues from Navy and tenant activities. Easements for the system are included as a condition of conveyance out of Navy ownership. Island Energy is

submitting an application to the Western Area Power Administration (WAPA) to receive the Navy's former allocation of power to Mare Island. WAPA is required to grant the allocation for at least 10 years after the closure of Mare Island.

Alternate Power

An alternate 115-kV transmission line was built in 1988 to supply power to Mare Island in the event of damage to the main transmission line or other interruptions in power to the shipyard. The line originated at the PG&E Ignacio tower line and ran approximately 4.3 miles southeast to Mare Island, crossing an area known as Cullinan Ranch. The alternate transmission line was removed in the fall of 1996 after base closure.

3.12.6 Stormwater System

Mare Island's stormwater collection and disposal system collects surface water runoff and conveys the water to the Mare Island Strait through outfall pipes (Figure I-6). Most of the stormwater system is on surplus land, though some piping west of Coral Sea Village and Farragut Village is on state reversionary land. The capacity of the system varies, depending on the tidal stage in the strait. The shipyard owned the stormwater system, which covers all developed areas on the island. The system received no routine maintenance, and repairs were made only when necessary. The system was operated and repaired by PWC.

The stormwater system consists of a network of catch basins, pipes, manholes, pump stations, and outfalls with flapper valves. Pipes in the system vary in size and type of material. Piping ranges from 3 inches to 54 inches and includes an 80-inch drainage tunnel north of Dry Dock 1. Pipe material includes vitrified clay, cast-iron, concrete-lined corrugated metal, transite concrete, corrugated metal, and nonreinforced concrete.

The Mare Island stormwater system has several problems, although the system is able to drain most parts of the base without flooding. There are contaminants in sediments in pipelines and manholes. Many of the pipelines are undersized and do not meet the VSFCD minimum stormwater pipe diameter requirement of 12 inches. Many of the outfall flapper valves also need replacing.

3.12.7 Specialized Shipyard Systems

Specialized shipyard systems that were required to support industrial operations included dredge lines, fuel oil system, steam systems, hot water circulating system, and a dry dock flood and drain system. Several of these

systems are in poor condition. The fuel oil and hot water loop systems have been taken out of service. The Navy abandoned the steam system after closure of the shipyard. The remaining systems are in good condition, although the Navy abandoned the pure water and compressed air systems after closure because they were not needed.

Dredge Lines

Both the Navy navigational channel of the Mare Island Strait and the waterfront area of the shipyard required dredging. The COE dredges the strait annually and disposes of the dredged material at the Carquinez disposal site. The Navy dredged the waterfront berths, dry docks, and finger piers and disposed of the dredged material in the ponds on the western side of the island. The Navy dredging operation was authorized by a COE permit, which is no longer active as there is no dredging of the berths under caretaker status.

Mare Island's dredging operation consisted of a hydraulic dredge, floating pipeline, underground piping system, and dredge ponds. Dredged material was pumped from the dredge through a floating pipeline to an onshore underground piping system and on to the dredge spoil ponds. The dredge ponds, most of which are on state reversionary land, required continual maintenance. With the exception of some sections of piping, the dredging system is in very good condition (Vallejo 1994c). See Section 3.7.5, Dredging, for a detailed discussion of the dredging system.

Mare Island maintained a NPDES permit, issued by the San Francisco Bay RWQCB, for discharging dredged material wastewater into San Pablo Bay. This permit was renewed in 1991 and expired in September 1996.

Dry Dock Flood and Drain System

The dry dock flood and drain system allows for filling and draining dry docks. The system consists of a series of flooding and discharge tunnels, sluice gates, and pumping stations. One pumping station serves Dry Docks 1 and 2; a second serves Dry Docks 3 and 4. Dry dock discharges are controlled by NPDES Permit CA0005517 and the Navy's best management practices. The dry docks are kept empty under caretaker status, and rain water is pumped from them into the sanitary wastewater system.

Maximum ship dimensions permitted in each dry dock are described in Table 3-28. The dry docks required regular certification for operation, and all 4 dry locks were certified and in good condition at the time of base closure.

TABLE 3-28
MAXIMUM DRY DOCK SHIP PARAMETERS

Dry Dock No.	Length of Ship (ft)	Beam of Ship (ft)	Sill Elevation (ft MLLW)*	Super Flood Elevation (ft MHW)*
1	499	68	-30	3.3
2	719.2	90.25	-25.5	0
3	672.3	79	-30	0
4	419.6	81.5	-17	0

* MLLW = Mean low lower water
MHW = Mean high water

Source: Vallejo 1994c

Saltwater Systems

Historically, the base included an active system that provided cooling saltwater to ships and submarines and augmented fire-flow requirements. The saltwater system is being converted to fresh water. The base also had a separate industrial wastewater collection system that was largely deactivated prior to closure due to deterioration.

Steam Systems

Electrical demand declined from 26,469 kilowatts (kW) in 1986 to about 15,000 kW in 1994 to 1995. A steam turbine generator capable of producing 5,000 kW was located in the Central Power Plant (steam plant). This generator was abandoned upon closure. In addition, prior to closure, the base included dedicated emergency electrical generators for industrial radio communications, emergency services radio communications, the emergency command center, food storage facilities, industrial waste and sewage treatment plant, dry dock pumphouses, controlled industrial area security lighting, and the Navy medical/dental clinic. These systems were shut down and removed upon closure.

3.12.8 Utility Regulations

Water Distribution System

Sampling for lead and copper in drinking water is outlined in the SDWA. Testing Mare Island's drinking water is an ongoing program; the Navy tested drinking water prior to closure, now Vallejo has taken over drinking water testing. Testing in 1994 indicated readings well below the maximum contamination levels (US Navy 1994c).

Wastewater System

The main regulatory laws that govern wastewater discharges at Mare Island are the Clean Water Act, 33 U.S.C. §1251, on the Federal level and the Porter-Cologne Act, Cal. Water Code §13000 *et seq.*, on the state level. The California Regional Water Quality Control Board, San Francisco Bay Region, via VSFCD, oversees the Mare Island system (US Navy 1994c).

Solid Waste Management

The Solid Waste Disposal Act (SWDA) of 1965, 42 U.S.C. §6901 *et seq.*, as amended by the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. §6901 *et seq.*, requires that Federal facilities comply with all Federal, state, interstate, and local requirements for disposing of and managing solid waste. This applies to land under state, Federal, and local jurisdiction. RCRA establishes public safety and health standards for disposing of solid waste, including requirements for landfill liners and leachate collection and treatment. RCRA and the Military Construction Codification Act of 1982, 10 U.S.C. §2577 *et seq.*, also provide for various means of recovering value from solid waste. Wastes may be recycled, reclaimed, used as a fuel supplement, or sold for profit.

The California Integrated Waste Management Act, Cal. Pub. Res. Code §40050 *et seq.*, requires counties in California to divert 25 percent of their solid waste from landfills by 1995 and 50 percent by 2000. Cal. Pub. Res. Code §42000-42023 established state programs designed to increase recycling and to encourage developing commercial markets for recyclable materials. In general, the state places the burden of action and responsibility on the county to meet the state requirements.

Stormwater System

The stormwater system operated under a NPDES, Statewide General Industrial Stormwater Discharge Permit. The permit required the preparation and certification of the SWPPP, per the requirements of the General Industrial Permit. An annual report was submitted to the RWQCB, based on the monitoring and reporting requirements of the permit. The shipyard met this requirement with a program plan submitted in October 1992. SWPPP requirements apply to land under state, Federal, or local jurisdiction.

The permit also required monitoring and sampling discharges. The Mare Island monitoring program consisted of sampling at 4 outfalls in the controlled industrial area, 1 outfall near the causeway, and 1 outfall near a paint shop. These outfalls were sampled during the rainy season.

The Water Resources Control Board has allowed the remaining outfalls to be excluded from sampling because the tributary area land uses are considered nonindustrial and have been documented to be substantially identical in runoff characteristics. The outfalls were, however, visually monitored. The runoff at the manhole nearest to the outfall was observed during the first hour of 1 storm per month.

Under direction from the state, the shipyard is operating under the old NPDES permit, which expired, until the new permit is approved by the state (Johnson 1997).

Dry Dock Flood and Drain System

Under NPDES Permit CA0005517, monthly sampling is required at each of 4 sump outfalls. Discharges also were controlled, in accordance with shipyard best management practices.

3.13 HAZARDOUS MATERIALS AND WASTE

Mare Island Naval Shipyard operated as a military installation beginning in the mid-1800s. Ship building and maintenance activities included operating machine shops, fueling facilities, metal fabrication and plating shops, battery shops, and fuel storage tanks. Fuels, lubricants, paints, solvents, and other industrial chemicals were used throughout much of the history of the shipyard. Similarly, ordnance was manufactured, used, and disposed of on Mare Island. More recent activities included maintaining and refueling modern submarines and handling and storing radioactive materials. The age of most shipyard buildings also means there is the potential for the presence of lead-based paints and asbestos-containing material.

Although widely accepted at the time, procedures followed prior to the mid-1970s for managing and disposing of many wastes often contaminated the environment. Managing hazardous materials now is rigorously regulated by Federal, state, and local laws and regulations. The Caretaker Site Office and EFA-West are responsible for implementing current compliance programs and for managing site assessments and subsequent site restorations. The following description of hazardous materials at the shipyard includes information regarding the on-going remediation activities that have continued since base closure. Sites are assumed to be on surplus land, unless identified as sites on property to be transferred to other Federal agencies or state reversionary land.

The hazardous materials and waste information provided in this section generally reflects preclosure conditions for each area of concern. Information is based primarily on survey data from the Mare Island Environmental Baseline Survey (EBS) (US Navy 1994c) and BRAC Cleanup Plan (BCP), Revision 3 (US Navy 1996). Where applicable, the description of hazardous materials on the island has been organized by reuse area, consistent with the Mare Island Naval Shipyard Reuse Plan.

The ROI for hazardous materials and waste is Mare Island and any surrounding waters that may contain potential hazardous materials (e.g., live or inert ordnance). The 3 off-island properties—the Main Entrance, Roosevelt Terrace, and the rail spur—are included in the ROI.

3.13.1 Hazardous Materials Management

Under the requirements of the DBCRA 1990 process, Pub. L. 101-510, Title XXIX(A), 10 U.S.C. §2687 note, Mare Island completed a basewide EBS in December 1994 and a BCP in March 1995. The EBS is a preliminary evaluation and summary of all known and suspected areas where hazardous materials or petroleum products have been handled, stored, disposed of, or released within the boundaries of the former shipyard and adjacent areas. The

BCP provides a plan and schedule for remediation. It is revised periodically to provide an ongoing status of environmental restoration and associated compliance programs. During preparation of the EIS/EIR, the most recent available update of the BCP was the March 1997 revision.

Prior to base closure, hazardous materials that were not required for the environmental restoration process or caretaker maintenance activities were collected from all designated storage areas and were transferred to the Defense Reutilization and Marketing Office (DRMO) at Building 655 in Reuse Area 1. The amount of hazardous materials collected at closure was minimal. Materials that were not redistributed or sold subsequently were disposed of off-site, in accordance with Resource Conservation and Recovery Act (RCRA), 42 U.S.C. §6901 *et seq.*, and state requirements.

Some quantities of hazardous materials continue to be used at Mare Island during the caretaker period. These materials include lubricants, degreasers, cleaners, and pesticides used for general maintenance activities. Interim leasing activities also include use of coatings, abrasive blasting, and welding.

3.13.2 Hazardous Waste Management

Mare Island was listed in the March 1992 RCRA (US EPA) database as a large quantity hazardous waste generator, as well as a treatment, storage, and disposal facility (TSDF). Hazardous waste generated at the shipyard was handled under guidelines outlined in the Mare Island Naval Shipyard Hazardous Waste Policies and Procedures Manual (US Navy 1993d), which incorporates local, state, and Federal regulations. The manual identifies wastes generated by the shipyard and specifies appropriate procedures and processes to manage the waste, including reduction, recycling, and manifest procedures. Most hazardous waste generation historically occurred in the shipyard's controlled industrial area.

Mare Island historically operated 6 hazardous waste treatment facilities under a tiered permitting program established by the California Wright-Polanco-Lempert Hazardous Waste Treatment Permit Reform Act (AB 1772). These treatment facilities are listed in Table J-1 in Appendix J of this document. All of the facilities have been closed.

Hazardous waste can be stored for up to 90 days in hazardous waste accumulation areas (HWAA). There were 110 HWAAs on Mare Island; all are now closed. The location and materials formerly stored at the hazardous waste accumulation areas are listed in Appendix J Table J-2. Three hazardous waste storage facilities—Buildings A-195, 213, and 759—operated under RCRA interim status and were allowed to store the waste for up to 1 year. These storage facilities were closed and all hazardous waste was removed for off-site

disposal at the time of base closure. Accumulation areas and storage areas are shown on Figure J-2.

In 1987, Mare Island signed a consent decree that required it to develop a program to monitor hazardous substance releases or incidents where there was a serious threat of release. In response, the Mare Island Shipyard Hazardous Waste Correction Notice (HWCN) Program was initiated to track all releases. Under this program, reportable spills included releases below the regulatory reportable quantities. The HWCN database was queried for all significant releases, and the results of this query are listed in Appendix J, Table J-3. Table J-3 also includes releases to land and water (1985 to 1990), as itemized in the Mare Island Spill, Prevention Control, and Countermeasure Plan (US Navy 1991). The table does not include 84 incidents of sandblast material found in the drydock channels at Drydocks 1, 2, 3, and 4. Locations of significant hazardous waste spills are shown on Figure J-3.

At the time of closure, shipyard hazardous wastes were collected from all designated areas, transferred to the DRMO, and then disposed of off-site, in accordance with RCRA and state requirements. Radioactive and mixed wastes were handled separately, in accordance with Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. §9601 *et seq.*, RCRA, and state requirements, and were disposed of prior to closure (with the exception of a small quantity of G-RAM low level waste, which was removed shortly after closure).

Following base closure, operation of the hazardous waste treatment and hazardous waste accumulation areas was discontinued. Very limited quantities of hazardous wastes are generated by maintenance operations, and such wastes are handled in accordance with current regulatory guidelines and industry standards and are disposed of off-site.

3.13.3 Installation Restoration Program

Mare Island's Installation Restoration Program (IRP) is an ongoing operation that has continued unabated since operational closure in April 1996. Portions of Mare Island involved in the IRP may be delayed from disposal and reuse until such time as they are determined to be "remediated." The following is a description of the program, including an identification of IR sites on Mare Island.

Federal Facility Site Remediation Agreement (FFSRA)

On September 29, 1992, the State of California and the US Department of the Navy signed a FFSRA, pursuant to the following statutes and associated regulations:

- California Health & Safety Code (CH&SC), Division 20, Chapters 6.5 and 6.8, §102 and §25355.5(a)(1)(C);
- California Water Code (CWC), Division 7;
- CERCLA, 42 U.S.C. §120(a)(4), §120(f), and §121;
- NEPA, 42 U.S.C. §4321;
- Defense Environmental Restoration Program (DERP),10 U.S.C. §2701 *et seq.*; and
- National Contingency Plan (NCP), 40 C.F.R. §300.1 *et seq.*

The FFSRA, which was updated in February 1997, requires compliance with applicable state and Federal laws and consistency, to the maximum extent possible, with the guidance and policy from the NCP and other terms and conditions stated by the FFSRA. Under this agreement, the Navy agreed to undertake various environmental restoration actions. These tasks include the following:

- Perform preremedial work and remedial investigations to determine fully the nature and extent of the threat to the public health or welfare or to the environment and to perform a feasibility study for the site to identify, evaluate, and select alternatives for the appropriate remedial actions.
- Identify the nature, objective, and schedule of response actions to be taken at the site.
- Implement the selected remedial actions in accordance with applicable state and Federal laws.
- Assure compliance with applicable state and Federal hazardous waste and water quality laws and regulations.
- Expedite the cleanup process to the extent consistent with protection of human health and the environment.
- Provide for initiating, developing, selecting, and implementing the Navy response actions, including operable units and the final remedial actions, to be undertaken at the site.
- Provide for state oversight of and participation in initiating, developing, selecting, and implementing response actions, including operable units and the final remedial actions, to be undertaken at the site.

- Provide for operating and maintaining any remedial actions selected and implemented.

- Identify operable unit alternatives that are appropriate at the site prior to implementing final remedial actions.

All parties agreed to the schedule set forth in Appendix A of the FFSRA agreement for completing primary and secondary documentation. The Navy also agreed to assist the state in complying with CEQA.

CERCLA Remediation Process

CERCLA requires that all Federal facilities comply with state and Federal laws with regard to the remediation process. The Mare Island IRP follows this process. Phases of the process are described below:

Site Discovery (SD). A site is an area that has had or has the potential for a hazardous substance release. A single facility may contain several sites to be studied under the IRP. Occasionally, potential sites are discovered by searching through records or during construction projects.

Preliminary Assessment (PA). This assessment identifies areas of potential contamination and evaluates each area to determine if there is a threat to human health or the environment. A PA report is developed from readily available information, such as past inventory records, aerial photographs, employee interviews, existing analytical data, and an activity visit. A PA may recommend no further action, additional work under the IRP, or a removal action.

Site Inspection (SI). This inspection is conducted after the PA when additional information is needed to evaluate a site. Collecting and analyzing soil, sediment, and surface, and ground water samples may help to determine the need for further study. Information needed for hazard ranking is also collected. An SI may recommend a site for no action, further study, or an immediate removal action. The PA and SI often are performed concurrently.

Hazard Ranking System (HRS). This system provides a uniform method for scoring or ranking the potential risk of a site where there has been a hazardous substance. A site in this context refers to the entire Mare Island complex. The EPA developed the HRS to prioritize cleanup efforts. The EPA evaluates the draft HRS packages and proposes any facilities scoring 28.5 or higher for inclusion on the National Priorities List (NPL). Facilities listed on the NPL receive the highest priority. Mare Island is not on the NPL. The US EPA has recommended the site to be included on the NPL; however, the State of California has not agreed to the listing, and the US EPA, per law, will not list

Mare Island on the NPL. Despite the site's absence from the list, the fact that Mare Island is a closing base and received Base Realignment and Closure funds for cleanup ensures that it will receive as high a priority for cleanup as a base on the NPL would.

Removal Actions. In the event of an immediate threat or potential threat to human health or the environment, a short-term mitigating or cleanup action may be implemented. The goal of the removal action is to isolate the contamination hot spots and their source from all biological receptors. Usually, removal actions do not completely clean up a site, and additional remediation steps are required.

Remedial Investigation (RI). This investigation is performed to more fully define the nature and extent of the contamination at a site and to evaluate possible methods of cleaning up the site. During the investigation, ground water, surface water, soil, sediment, and biological samples are collected and analyzed to determine the type and concentration of each contaminant. Samples are collected at different areas and depths to help determine the spread of the contamination. The RI process at Mare Island typically is done in 2 phases—phase I, site characterization, and phase II, characterization of the constituents of concern, the migration pathways, and the potential hazards to human health and the environment.

Feasibility Study (FS). The feasibility study identifies and evaluates all applicable site cleanup alternatives. As part of the study, a risk assessment is performed to quantify the level of risk to the public and environment posed by the site. Often, the risk assessment determines which alternative is selected for final remediation. Each alternative is evaluated for effectiveness in protecting human health and the environment, ease of implementation, and overall cost. Typically, the RI and FS are performed concurrently.

Remedial Action Plans (RAP)/Record of Decision (ROD). These 2 documents are essentially the same. RAP is the state term while ROD is Federal. The RAP/ROD documents the reasoning behind selecting a particular cleanup alternative. A RAP/ROD is required even if the most feasible alternative is no action.

Remedial Design (RD). After RAP/ROD is signed, the remedial design phase can begin. In the RD, specific construction parameters or equipment specifications are presented for the selected cleanup alternative.

Remedial Action (RA). During the remedial action phase, the selected cleanup technology is implemented. RA can be as simple as soil excavation or as complicated as a complete ground water treatment system, which may operate for many years. Remedial action work plans for long-term remediation

include operation and maintenance (O&M) plans, which continue until the cleanup is complete.

Long-term Monitoring. After completion of the RA, Federal, state or local regulatory agencies may require subsequent monitoring of the site.

Mare Island's Installation Restoration Program

In 1981, the Chief of Naval Operations (CNO) directed the Naval Energy and Environmental Support Activity (NEESA) and the Ordnance Environmental Support Office (OESO) to initiate a program to evaluate health and environmental hazards at naval activities with past hazardous material operations and waste disposal activities. This direction resulted in the IRP as currently defined by the Navy/Marine Installation Restoration Manual. The purpose of the IRP is to identify, assess, characterize, and clean up or control contamination from past hazardous waste disposal operations and hazardous material spills at Navy and Marine Corps activities. Mare Island's IRP is consistent with the CERCLA remediation process, as implemented by FFSRA.

Potential IR sites were first identified at Mare Island during an initial assessment study (IAS) conducted for the Naval Energy and Environmental Support Activity (US Navy 1983). Subsequent studies and evaluations have resulted in a current total of 24 sites in the Mare Island IRP. Each of these sites is under investigation as part of a current phase II RI. Each IR site is briefly described in Appendix J, Table J-4, where it is identified within a reuse area. Locations of the IR sites are shown on Figure J-4.

The following general discussion of each of the 24 IR sites is based on the Interim Site Description Report (US Navy 1994e). The status of the IR and PA/SI sites is periodically updated in the BCP. All sites within the ROI are discussed because they hold the potential for affecting reuse of the Federal surplus property.

IR01 and IR02—Historic Landfill and Oil Sumps (Reuse Areas 2, 3, 6, 13, Dredge Ponds, and Wetlands). The Historic Landfill (IR01) and Oil Sumps (IR02) are on the western portion of Mare Island, adjacent to San Pablo Bay. IR01 is on both surplus and state reversionary land, while IR02 is entirely within the boundaries of the state reversionary land. The landfill occupies about 100 acres. The IR02 oil sumps are completely within the boundaries of the historic landfill and occupy about half an acre. The surface over most of the historic landfill consists of dredge spoil and other artificial fill material. The surface of the oil sumps is composed of sandy artificial fill. An inactive sanitary landfill (about 30 acres on the southwest corner of the historic landfill) is the most recently used disposal area on the site. The landfill has not been operational since December 1988.

An extensive variety of wastes were disposed of at the historic landfill from the early 1900s to the present, resulting in an estimated 2 million tons of waste (US Navy 1983). In 1915 or 1916, black powder reportedly was disposed of at the site. Materials disposed of through the 1930s consisted of trash, scrap wood and metal, and miscellaneous garbage. Materials disposed of from the early 1940s until the late 1980s include general trash and garbage, spent abrasives, scrap metal, concrete, wood and other construction debris, waste paints, solvents, acids, caustics, cleaning fluids, PCB-contaminated fluids, food wastes, infectious medical wastes, batteries, and other miscellaneous wastes. In addition, large quantities of asbestos, both bagged and loose, were disposed of in designated pits adjacent to the inactive sanitary landfill (US Navy 1983). Records show that prior to 1960, open burning and burial were the most common methods of disposal. In the early 1960s, open burning was discontinued in favor of burial in large excavated trenches that were backfilled with cover material, a practice that was discontinued in the mid-1970s.

Oil sumps located on the road to the landfill were used to dispose of waste oils generated by Mare Island activities from about 1942 to at least 1964. Waste materials in the IR02 oil sumps may contain PCBs and other pollutants in addition to petroleum-related wastes. On the basis of previous investigations, the IR02 Oil Sumps are thought to be the major source of total petroleum hydrocarbon (TPH) contamination at IR01 and IR02. The IAS (US Navy 1983) reported 2 separate unlined sumps, the larger of which had a surface area of about half an acre. The estimated depth of the sumps ranged from 8 to 10 feet. According to the IAS, the sumps received an estimated 4.5 million gallons of waste oils and fluids. After the sumps were abandoned, the sumps were backfilled with silty, sandy, and gravely soils. Storm drains, backfilled trenches, sand layers, active and abandoned subsurface piping, and unconsolidated fill material are thought to be possible constituent migration pathways at the site.

An air quality solid waste assessment test (SWAT) was conducted on the historic landfill site during October and November of 1991 (US Navy 1992). California Health and Safety Code Section 41805.5 requires that owners of all active and inactive solid waste disposal sites that may have accepted hazardous waste must determine the composition of landfill gases, the presence of specified contaminants in the ambient air, and whether landfill gases have migrated off-site. The study indicated that landfill gases were detected only at the western portion of the landfill. No off-site migration of landfill gases was detected.

IR03—Berths 4 and 5 (Reuse Area 3). IR03 is relatively flat and paved, with limited areas of vegetation. A portion of the site is constructed on a relief platform along the Mare Island Strait. Berths 4 and 5 served as a refueling facility for naval vessels. Fuel oils, most likely from 1 or more of the 4 buried

tanks in the area or from abandoned fuel lines that served Berths 3 through 8, have been reported in sewer lines and open excavations as early as 1980.

IR04—Building 900 Area (Reuse Area 10). Site IR04, consists of an undeveloped area near Building 900 and Berth 24 on the southeastern shore of Mare Island. Since 1952, the site has been used for sandblasting and painting submarine parts and ships. There may be as much as 350 tons of abrasive grit at the site. Abrasive grit, some of which is known as green sand, may be sandlike grains that contain high concentrations of various heavy metals and antifouling agents used in paints applied to ship parts. Nontidal and tidal wetlands on the site may be affected by the sandblast abrasive and associated contaminants.

IR05—Concord Annex (Reuse Area 12). Site IR05, bounded by San Pablo Bay to the east and south, is on both surplus and state reversionary land. Dikes supporting 2 dredge disposal ponds constitute the western boundary. The northern pond is still in use. The inactive southern pond has been designated a wildlife preserve under an agreement with US Fish and Wildlife Service and supports a large stand of pickleweed that provides habitat for the endangered salt marsh harvest mouse. IR05 is within the Concord Annex munitions area that was used to manufacture, store, test, and decommission naval ordnance and ammunition between 1857 and the mid-1970s. This area may be contaminated with heavy metals, oils, and nitrates. There is no current storage or disposal activity on the IR05 site.

IR06—Industrial Waste Treatment Plant (IWTP) Surface Impoundments (Reuse Area 13). Site IR06, located within the boundary of the IR01 historic landfill on state reversionary land, consists of 4 IWTP ponds. The ponds were constructed in 1972 as part of a treatment plant upgrade. Two ponds were used for wastewater blending, and 2 were used to store sludge from the water treatment process. Use of the ponds was discontinued in November 1988. Wastewater influent to the IWTP is known to have contained oily and inorganic residues associated with metal cleaning, electroplating, battery overhaul activities, oil reclamation, and photographic processing operations. Contaminants associated with these activities have been detected at the site and include PCBs, metals, volatile organic compounds (VOCs), pesticides, herbicides, and oil and grease.

IR07 and IR20—T3 Acid Tank and Buildings 463 and 463A (Reuse Area 3). Site IR07, the T-3 acid tank system, and IR20, Buildings 463 and 463A with elevated aboveground storage tanks, are south of the causeway within the developed portion of Mare Island. The facilities are primarily on fill material and are surrounded mainly by paved areas. The T-3 acid tank system was used for acid and wastewater treatment. Elevated tanks at Buildings 463 and 463A were used to store acids, electrolytes, and distilled water for use in operations at Building 463, the acid mixing plant. Waste materials that may have been

released to subsurface soils include spent battery acids and heavy metals. Possible contaminant migration pathways are located along underground utility lines and associated trench fill material. Building 463A was historically used as a laboratory facility.

IR08—Battery Storage Area (Reuse Area 1). Site IR08, located at the north end of Mare Island, is inside a locked outdoor storage area northwest of Building 629 and was used to store lead-acid batteries. Soils and ground water at IR08 are contaminated with various forms of lead oxides.

IR09—Building 334 Paint Shop (Reuse Area 4). Site IR09 is between Drydock 2 and Berth 12. Operations in the paint shop included paint spraying, mirror manufacturing, silk screening, Tefloning, and parts cleaning. In addition, 3 underground storage tanks were removed near Building 334. Investigations have shown that soils and ground water in the vicinity are contaminated with detectable levels of organics, metals, and TPH.

IR10—Building 831 Area (Reuse Area 6). Site IR10 is just beyond the northernmost portion of the Farragut Village housing. The site is currently vacant and covered with grass. There are wetlands immediately west of the site. PCB concentrations in soil at the site have been detected at levels as high as 1,220 milligrams per kilogram. Pesticides also have been detected in soils in the northern portion of the site.

IR11—Building 866 (Reuse Area 9). Site IR11 is near the center of Mare Island. The building has been used as an electrical shop since its construction in 1955 and has been used for motor, instrument, and transformer repair. Potential waste-generating activities have included cleaning and plating electrical parts, applying lubricants, sealants and paints, and molding epoxy and rubber compounds. When transformers were drained and cleaned, PCBs were released to a floor drain connected to the industrial waste treatment system. In addition, many types of solvents have been used at the site.

IR12—Building 516 Electrical Substation (Reuse Area 4). Site IR12 is in the heavy industrial zone of Mare Island between Drydocks 1 and 2. This substation contained transformers and electrical vaults beneath the transformers that may be pathways for transporting PCBs from the site. High levels of PCBs have been detected in the concrete and sediment of 1 of the electrical vaults.

IR13—Building 433 (Reuse Area 6). Site IR13 is a former radio operations facility near the northern end of Farragut Village. In 1981, about 5 gallons of PCB transformer oil leaked into an open concrete sump and drained into the low-lying wetland area about 50 feet north of Building 433. Although a

removal action took place in 1981, it was not well-documented. PCB contamination remains at the site.

IR14—Industrial Waste Treatment Plant (IWTP) Collection System (Reuse Areas 2, 3, 4, 5, 6, 9, 10, 13 and Wetlands). Site IR14 consists of about 23,000 linear feet of underground industrial wastewater lines, 11 of 12 industrial wastewater pump stations, and 3 pretreatment facilities. Portions of the wastewater lines in Reuse Areas 6 and 13 are within the boundaries of the state reversionary land. Industrial wastewater generated at Mare Island is conveyed by the system of lines and pump stations to the treatment plant. Treated effluent from the IWTP is combined with Mare Island's sanitary wastewater and is discharged to the Vallejo Sanitation and Flood Control District collection system for secondary waste treatment. Green sand (spent sandblast material) was used as bedding material for portions of the wastewater line and may be a source of contamination throughout the system area. PCBs have been detected in the IWTP collection and treatment system near Building 866 (IR11), and heavy metals and VOCs were detected in soil samples collected from soil borings near the industrial wastewater pump stations. A portion of this site is on Federal agency transfer lands.

IR15—Building 225 Electroplating Shop (Reuse Area 3). Site IR15 is north of Ways 1. Electroplating was performed here until it was closed in 1988. The site is relatively flat with a slight slope toward Mare Island Strait. Plating operations involved heavy metals, acids, solvents, cyanide, and caustics. Liquids splashed or spilled onto the concrete floor were discharged to the IWTP Collection System (IR14). In addition, a concrete-lined sump in the building contained a chromic acid plating tank. The tank and soil below it were removed in 1987, and hexavalent chromium was detected from soil sampling in the area. Oil and grease also have been detected in soil borings around the building. Constituents detected in ground water included oil and grease from an unknown source, hexavalent chromium, and lead.

IR16—Lead Oxide Areas (Reuse Area 2, 13 and Wetlands). Site IR16 consists of 6 distinct subsites used to dispose of lead-acid batteries. The 6 subsites are within the approximate boundary of the shipyard historic landfill (IR01). Two of these sites are on state reversionary land. Soils and ground water at IR16 are contaminated with various forms of lead oxides.

IR17—Buildings 519 and 567 Painting Shops (Reuse Area 1). Site IR17 is located near the northern end of Mare Island. Materials used for paint and varnish formulation and blending in the Buildings 519 and 567 painting shops included lead- and mercury-based paints, thinners, epoxy, and solvents. Although the 2 buildings have been demolished, the concrete foundations remain. Analytical results of soil borings beneath the concrete floors and ground water samples from the uncased boreholes showed that organic compounds and metals,

including antimony, lead, copper, selenium, and zinc, were present in both soil and ground water. Additional sampling efforts detected PCBs, metals, semivolatile organics, PAHs, and major anions.

IR18—Building 565 Former Base Exchange Gas Station (Reuse Area 2). Site IR18 is south of the causeway and near the historic landfill. In 1990, 4 underground gasoline storage tanks were removed. Concentrations of TPH, benzene, toluene, xylene, and lead were detected in soil and ground water near the underground tank locations.

IR19—Building 814 Metal Cleaning and Boiler Shop (Reuse Area 5). Site IR19 is south of Drydock 4 and about 1,000 feet southwest of Mare Island Strait. The area is no longer used and is surrounded by a security fence. The building and adjoining areas were used to clean and prepare metals prior to plating. Seven aboveground open-top tanks are inside the building, and 1 tank is outside. Metals, petroleum hydrocarbons, and VOCs were detected in soils around the site.

IR20—T3 Acid Tank System. (see IR07)

IR21—Building 386 Forge Shop Area (Reuse Area 5). Site IR21 is in the industrial area west of Drydock 4. Operations within the building included coating metal chain with lead-based paint. Various forging activities were conducted in adjacent Buildings 388 and 390. Buildings 386, 388, and 390 are parts of a single structure built around 1922. Past studies have revealed soil contamination with benzene, toluene, ethylbenzene, and xylene (BTEX); TPH-gasoline; TPH-diesel; and lead. Ground water in the area is contaminated with TPH-diesel.

IR22—Buildings A-249 and A-250 Ammunition Bunkers (Reuse Area 12). Site IR22 is on a hill in the remote southern portion of Mare Island. The bunkers were cut into bedrock and were constructed of reinforced concrete. Explosives and pesticides were stored inside the bunkers. The bunkers were steam-cleaned in 1989, and metals detected in concrete samples taken from the floors included arsenic, beryllium, cobalt, copper, nickel, and lead. A removal action has been completed, and no further actions are planned.

IR23—Fuel Oil Tank 772 (Reuse Area 6). Site IR23, located in Farragut Village, occupies about 10 acres. Fuel Oil Tank 722 was a 2.1 million gallon, partially buried, reinforced concrete structure. In 1979, hairline cracks were discovered in the tank, and leakage was estimated at 1,000 gallons of fuel oil. TPH-diesel was detected in soil samples. The tank has been dismantled and removed, and a soil contamination removal action is underway.

IR24—Sewage Digester Tanker Area (Reuse Area 13). Site IR24 is within the western portion of the historic landfill area on state reversionary land. Several removal actions have been undertaken at this site. To mitigate risks from wastes that remained in the digester tanks, the tanks were pumped out, cleaned, demolished, and removed for disposal. The area contained elevated concentrations of TPH, semivolatile organic compounds (SVOCs), PCBs, and various metals that, for the most part, have been remediated.

Site Discovery and Assessment

In addition to the 24 IR Sites, other locations have been identified in various reports as areas of concern. These sites will be investigated further through the PA/SI process.

In 1987, a RCRA preliminary review of Mare Island was performed for the US Environmental Protection Agency to identify and evaluate solid waste management units (SWMUs) and other areas of concern. An initial 95 SWMUs were identified in the preliminary review. Additional areas of concern from the preliminary review and subsequent studies resulted in a list of 143 (PA/SI) sites at the time of base closure. Some of these were within IR sites and have been incorporated into an accelerated PA/SI/RI program. Some of the sites were subsequently dropped from the PA/SI process, based on the results of additional investigation. There are approximately 45 remaining PA/SI sites.

Radiological investigations are no longer part of the regular SWMU process but are being handled by a separate shipyard radiological decommissioning plan. See Section 3.13.9.

Each PA/SI site is briefly described in Appendix J, Table J-5. Locations of the PA/SI sites are shown on Figure J-5.

3.13.4 Asbestos

Asbestos-containing material (ACM) remediation is regulated by the US EPA, the Occupational Safety and Health Administration (OSHA), and the State of California. Asbestos fiber emissions into the ambient air are regulated in accordance with Section 112 of the Clean Air Act, 42 U.S.C. §7412, which established the National Emissions Standards for Hazardous Air Pollutants (NESHAP). NESHAP regulations address the demolition or renovation of buildings with ACM. The Toxic Substances Control Act (TSCA), 15 U.S.C. §2601 *et seq.*, and the Asbestos Hazardous Emergency Response Act (AHERA), 15 U.S.C. §2601 note (West 1998), provide the regulatory basis for handling ACM in school buildings. AHERA and OSHA regulations cover worker protection for employees who work around or remediate ACM.

Renovating or demolishing buildings with ACM can release asbestos fibers into the air by disturbing damaging various building materials, such as pipe and boiler insulation, acoustical ceilings, sprayed-on fireproofing, and other materials used for sound-proofing or insulating. Only friable ACM, such as those listed above, is considered a health risk. Nonfriable ACM, such as transite piping, shingles, or floor tile, are not a health risk unless they are mechanically abraded to produce dust.

Buildings in all areas of Mare Island and the off-island properties can contain ACM. Previous abatement and control of asbestos has been conducted only during repairs or modifications.

Asbestos pipe insulation (lagging) is found on the steam piping throughout the shipyard. Abandoned steam lines at the south end of the shipyard and in various other locations are buried in place. Site IR01 and the SWMUs described in Section 3.13.3 include asbestos at the landfill and various work areas.

For shipboard asbestos, abatement was conducted either aboard Navy ships or in the shipyard's Asbestos Ripout Facility in Building 120. ACM removal also was conducted in Buildings 106A and 151 (Reuse Areas 3 and 5). The shipyard phased out the use of ACM between 1972 and 1977, and remaining new material inventories were removed. Asbestos insulation was stored in Buildings 215, 237, and 253 (Reuse Area 3). Other ACM materials, such as gaskets and welding blankets, were used and stored in numerous shops and supply buildings throughout the shipyard.

A comprehensive basewide survey for ACM has been completed at Mare Island, and abatement work will be performed as necessary prior to property conveyance for asbestos that is damaged, friable (crumbly), and accessible. DOD policy is that property with ACM will not be disposed of through the BRAC process unless it has been determined that the ACM does not pose a threat to human health at the time of property conveyance and that the property complies with applicable statutes and regulations regarding ACM. Schedules for surveys and abatement are included in the BCP.

3.13.5 Polychlorinated Biphenyls

PCBs occur in trace amounts in chlorinated hydrocarbon fluids used in electrical equipment, primarily in transformers and capacitors, because they are electrically nonconductive and are stable at high temperatures. PCBs also have been identified in light fixtures, ballasts, and certain machine shop equipment.

The disposal of these compounds is regulated under TSCA, which banned the manufacture and distribution of PCBs, except for PCBs used in enclosed

systems. By definition, PCB equipment contains PCB concentrations of 500 ppm or more, whereas PCB-contaminated equipment contains PCB concentrations of 50 ppm or greater, but less than 500 ppm. The US EPA, under TSCA, regulates the removal and disposal of all sources of PCBs containing 50 ppm or more; the regulations are more stringent for PCB equipment than for PCB-contaminated equipment. Primary Federal regulations for controlling existing PCBs are found at 40 C.F.R. Part 761. California regulations are more stringent than their Federal equivalents and are found at California Code of Regulations (C.C.R.) Title 22. Within California, a waste fluid containing 5 ppm PCBs or more is regulated as hazardous.

All Navy shore activities that generate, treat, store, or dispose of PCBs must inventory or validate all PCBs and PCB items annually, in accordance with Navy procedures and applicable Federal and state regulations. The California Department of Toxic Substances Control (DTSC) regulates PCBs as a non-RCRA hazardous waste. The Navy maintains a PCB electrical equipment database, from which Appendix J Table J-6 was generated. The extent of PCB contamination has been determined for all transformers at the shipyard. Table J-6 lists all transformers and some additional electrical equipment that were active as of August 1995 and that contained PCBs at 50 ppm or greater. Figure J-6 shows the locations of those transformers. Naval Operations Instruction (OPNAVINST) 5090.1B specifies eliminating all transformers containing 500 ppm or more PCBs by October 1998 and eliminating all transformers containing 50 ppm or more PCBs by October 2003. The presence of PCB-contaminated transformers or other known electrical equipment will be disclosed in FOSLs/FOSTs prior to property lease or conveyance, as appropriate.

In addition to the PCB-contaminated transformer program and the investigation of known or suspected PCB soil contamination at several IR sites and SWMUs (Section 3.13.2), the Navy initiated a PCB survey and sampling program for buildings, sites, and industrial equipment. The purpose of this effort was to identify existing PCB contamination and to perform remediation to support shipyard closure and turnover of buildings and equipment in an environmentally safe condition. The survey has been nearly completed and some PCB removal actions are underway. A comprehensive sampling plan will be carried out following the removal action to assess any residual PCB concerns.

3.13.6 Storage Tanks and Oil/Water Separators

Both underground storage tanks (UST) and aboveground storage tanks (AST) were used to store hazardous substances and petroleum products at locations throughout the former shipyard. Because oil/water separators (OWS) are often below ground and can create environmental issues similar to USTs, they

are included in this discussion. UST, AST, and OWS locations are identified in Appendix J, Figure J-7. With the exception of 2 ASTs, all USTs, ASTs, and OWSs are on surplus land.

USTs are subject to Federal regulations of RCRA, 40 C.F.R. Part 280, as mandated by the Hazardous and Solid Waste Amendments of 1984, 42 U.S.C. §6901 note (West 1995). The State of California has adopted regulations under Title 23, Division 3, Chapter 16 of the Code of California Registration (C.C.R.). California regulations are more stringent than the Federal regulations and require secondary containment on both the tank and piping systems installed after January 1, 1984. The VFD administers the state regulations for USTs at Mare Island. Each UST is tracked by an approved monitoring plan, as specified by the VFD. The status of all known USTs as of March 1996 is shown in Table J-7, Appendix J. Work is in progress to evaluate all remaining UST sites for contamination.

ASTs are regulated under California Health and Safety Code, Division 20, Section 6.7, the Uniform Fire Code, and the National Fire Protection Association regulations. The mechanism used for cleanup and prevention of spills is SB 1050 of January 1990. The spill prevention control and countermeasures plan (SPCC) for Mare Island provides direction for meeting the regulatory requirements of this bill. The SPCC plan is active at Mare Island and contains recommendations for secondary containment of ASTs. Regulatory control is by the State Water Quality Control Board. A program to properly label and placard all ASTs has been completed. The status of ASTs is summarized in Appendix J, Table J-7. All known ASTs are listed with their status as of March 1996.

OWSs are designed to separate oil, fuel, and grease from water by gravity. However, other contaminants, such as solvents, which are potentially present in water discharged to an OWS, cannot be removed by the OWS process. Water from an OWS typically is discharged to an industrial or sanitary sewer for further treatment. There are 10 confirmed OWSs at Mare Island, and all are inactive. Additional suspected OWS locations are being evaluated.

During the caretaker period, there will be little use of storage tanks or separators. It is the intent of the Navy to remove or close in place all identified USTs.

3.13.7 Pesticides

The registration and use of pesticides are regulated under the Federal Insecticide Fungicide and Rodenticide Act (FIFRA) of 1972, as amended, 7 U.S.C. §136 *et seq.* Pesticide Management activities are subject to Federal

regulations contained in 40 C.F.R. Parts 162, 165, 166, 170, and 171, and California regulations contained in C.C.R. Title 3, Chapter 4.

Pesticides were applied by DOD-certified pesticide applicators from the Navy Public Works Center. The marshlands mosquito control is conducted by contract with the Solano County Mosquito Abatement District. Specific pesticide uses are controlled by the Mare Island Annual Pest Management Plan, which specifies each type of building or terrain to be treated, the type of pest, pesticide product name and US EPA registration number, and mixing concentration or rate of application. Pest management plans are reviewed by the County Agricultural Commissioner's Office before being submitted for final Navy review and approval. Typical recent pesticide usage is listed in Appendix J Table J-8.

Pesticide treatment logbooks document dates, buildings/locations, and the types and methods of application. These records generally are maintained, as required by law, for only 2 years, but some pesticide logbooks dating from between 1950 and 1982 have been located.

Past usage included common pesticides, such as chlordane and DDT, which are now banned. Chlordane was applied to soils around wood-framed buildings for termite control. Studies in 1990 addressed chlordane in soils in excess of 2.5 mg/kg at Buildings 864, 765, and 735 (at and near the old elementary school site, Reuse Area 6). The site at Buildings 864 and 765 was redeveloped with a new elementary school and asphalt playground in 1989. The Building 735 lot is vacant and is fenced to prohibit access. These sites are under investigation as SWMUs 109 and 126.

The Mare Island pesticide storage area was at the west end of Building 455 (Reuse Area 2). No spills are known for this area, but the gravel pad adjacent to Building 455 was used for rinsing emptied pesticide spraying equipment. The gravel pad area is under investigation as SWMU 065.

Pesticides are being used in small amounts at Mare Island during the caretaker period. Mosquito abatement practices are continuing.

3.13.8 Lead

Lead was a major ingredient in the house paint used throughout the country and at the shipyard for many years. In 1978, the maximum lead content was reduced to 0.06 percent of newly applied dry paint. Lead-based paint use was discontinued in 1980.

Lead and lead-containing products have been used extensively during construction, repair, and overhaul of ships since Mare Island began in 1854.

Lead also was used for radiological shielding, ship ballasting, and various battery parts.

Installation Restoration sites shown in Appendix J, Figure J-4, could contain lead. The following is a summary of shipyard lead issues.

Current Issues

Mare Island's Lead-based Paint (LBP) Program. This program was developed in compliance with the Lead-based Paint Poisoning Prevention Act, 42 U.S.C. §4801 note (West 1995), and Residential Lead-based Paint Hazard Reduction Act of 1992, 42 U.S.C. §4851 note (West 1995). DOD policy regarding LBP is to manage it in a manner protective of human health and the environment and to comply with all applicable laws and regulations. For residential housing constructed between 1960 and 1978, the property must be inspected for LBP and the results of the inspection must be revealed to prospective purchasers or transferees. For residential dwellings constructed prior to 1960, any LBP hazards must also be abated (US Navy 1995). There are no regulatory requirements to survey or abate lead hazards in nonresidential facilities. Base housing is currently undergoing an assessment for LBP hazards under a Navy LBP program being conducted by PWC Norfolk (US Navy 1997).

Lead-acid Batteries. Lead-acid battery overhaul and replacement was performed at Mare Island for many years. Three areas that have indications of lead contamination from battery work are at the historical landfill (Site IR16), the acid tank/battery shop (Sites IR-07/20), and the battery storage area (Site IR08).

Historical Landfill. The historical landfill was used in the early 1900s. Batteries are among the items disposed of at this site, and spent battery casings were reported on the surface of the ground. Soil borings indicated lead contamination levels in soil (Sites IR01 and IR16).

Acid Tank/Battery Shop (Buildings 463 and 461). The acid tank, ship battery charging/scrap building, and the acid mixing/storing facility were used for disassembling, reassembling, drawing, rinsing, recharging, cleaning, and removing lead acid-battery plates (Sites IR-07/20).

Battery Storage Area (Building 629). This building was used for storing batteries prior to recharging or disposal. An initial assessment study reported lead oxide stains on approximately 50 square yards of soil adjacent to the storage area operation (Site IR08).

Spent Abrasive Materials. Extensive sandblasting was performed to prepare ship hulls for repainting. Spent abrasives contain elevated levels of lead due to the

use of lead-based paints. The highest activity area identified was the Building 900 area (Site IR04), which was used beginning in 1952. Spent abrasives were used as pipeline embedding material and were disposed of in the strait or landfill, although there are no records documenting these locations. If areas become known, they will be addressed in future issues of the BCP.

Elemental Lead Work. Lead was used for ballasting and for shielding to reduce radiation levels on nuclear powered ships. Lead forming operations, such as shaping, cutting, melting, and casting, were performed in Buildings 165 and 386 (Site IR21).

Metal Cleaning. A metal cleaning area for the boiler shop was reported as having soil with elevated lead contamination levels (Site IR19).

IWTP Collection System. This wide-ranging system was used for collecting and treating liquid industrial waste. Laboratory samples taken at various locations of the IWTP system indicated elevated lead contamination levels (Site IR14).

Small Arms Ranges. The shipyard's small arms ranges were used for years for rifle and pistol practice, resulting in spent lead projectiles deposited in the area. Small arms ranges and locations are further discussed in Section 3.13.11.

3.13.9 Radiological

Radiological Facilities

Radiological buildings, facilities, and areas have been categorized according to their contamination potential. This categorization was based on the past and present use of the areas, review of past radiological surveys, operating records, and interviews with shipyard employees. Facilities and areas requiring radiological surveys are listed in Appendix J, Table J-9, and are shown on Figure J-8.

Naval Nuclear Propulsion Program

Mare Island began constructing nuclear-powered submarines in 1956 and began radiological work in support of the Naval Nuclear Propulsion Program (NNPP) in 1957. Since the beginning of the program, NNPP radiological work has been performed under strict controls to preclude the spread of contamination. This radiological work has been performed in various buildings and areas over the years.

Detailed survey plans for the radiological decommissioning of the shipyard were prepared by its Radiological Controls Office. Buildings, facilities, work areas, and storage areas used by the NNPP were identified and included in

radiological decommissioning plans. The decommissioning plans used for removing radioactive material and for the required radiation surveys and radiological samples needed to verify the removal of radioactivity have been completed. No NNPP work remains. State and Federal regulators have concurred that no NNPP areas require further action.

General Radiological Material Program

In addition to the NNPP radioactivity, the shipyard has used and stored other general radioactive materials (G-RAM) in support of the Radiological Affairs Support Program. G-RAM includes radiographic sources used for nondestructive tests, sources used for instrument calibration, electrical instruments containing vacuum tubes with radioactive elements, radium dials and gauges, and thorium-enhanced products such as welding rods and optical coatings. Detailed survey plans for the radiological decommissioning of the shipyard were prepared by the Radiological Controls Office. Buildings, facilities, and storage areas that had a potential for radioactive contamination have been surveyed to identify the presence of or document the absence of these radioactive materials. The decommissioning plans were used for removing radioactive materials and specifying the required radiation surveys and radiological samples needed to verify the removal of radioactive materials. All radiological work was satisfactorily completed. State and Federal regulators have concurred for most G-RAM areas that no further action is required; concurrence will be obtained for the remaining G-RAM areas before they are released to the public for unrestricted use.

Mixed Hazardous and Radioactive Waste

Mixed waste (waste which is both hazardous and contaminated with low level radioactivity) was generated during overhaul and repair of nuclear-powered ships. Despite largely successful efforts to minimize generating mixed radioactive and hazardous waste, small quantities of NNPP mixed waste were generated. G-RAM mixed waste (not associated with the NNPP) has not been identified at this time. All mixed waste has been disposed of at a licensed facility off-site, or sent to a licensed facility for treatment and disposal.

Radiological Environmental Monitoring

Radiological environmental monitoring was conducted since the inception of NNPP work at Mare Island Naval Shipyard. This monitoring consisted of analyzing harbor sediment, water, and marine life samples for radioactivity associated with the Navy's nuclear propulsion plants, radiation monitoring around the perimeter of support facilities, and effluent monitoring. Environmental samples were checked at least annually by a US Department of Energy laboratory to ensure analytical procedures were correct and

standardized. This monitoring consistently demonstrated that NNPP activities at Mare Island had no adverse impact on the environment or public health. The US EPA confirmed this observation in a 1987 report.

Since decommissioning, facilities and property have been released for unrestricted use from a radiological perspective. All former shipyard properties have been released, with the exception of a few G-RAM areas, which will be so released in the near future.

3.13.10 Medical And Biohazardous Waste

Mare Island's Medical/Biological Waste Program is regulated under C.C.R., Title 22, Article 13.

The Naval Branch Medical Clinic (Building 201 in Federal Area 3) provided outpatient consultation and general clinical services. This clinic was the only recent generator of medical or biological wastes at Mare Island. Wastes included small amounts of laboratory reagent, x-ray film developing and fixing solutions, solid wastes (such as wound dressings), and empty or out-of-date pharmaceutical containers. Integrated Environmental Systems collected and disposed of these wastes weekly. Proper disposal was further assured by a dedicated storage facility and formal staff training on blood-borne pathogens.

The historic Naval Hospital (built in 1871), while no longer in service, was greatly expanded throughout its long history and played a significant role in World War II. Neither historical records nor interviews positively identified the types, quantities, or disposition of wastes generated by the hospital. An incinerator (SWMU-029), located at Railroad Avenue and 14th Street, was reportedly used for destruction of solid and biological waste material. It is assumed that wastes that were not incinerated were disposed of at the historic landfill (Site IR01). The Naval Regional Medical Center Dumpster (SWMU-032) is a PA/SI site. Wastes from this dumpster also have been deposited in the landfill.

3.13.11 Ordnance

Mare Island has a long history of ordnance manufacture, storage, and disposal. It is the policy of the DOD that real property known to be contaminated with explosives that may endanger the general public may not be released from DOD custody until the most stringent methods have been used to ensure appropriate protection of the public. The land transfer restrictions and remediation depth requirements for sites contaminated by unexploded ordnance are specified in Section 2-1.13.6e. of Navy Technical Manual NAVSEA OP 5 Volume 1. Plans for leasing, transferring, or disposing of DOD real property where ammunition and explosives contamination exists or

is suspected to exist must be submitted to the DOD Explosive Safety Board for review and approval of explosive safety aspects. Sites are on surplus property unless otherwise noted.

The general ordnance information presented in this EIS/EIR is based primarily on survey data taken from the Mare Island EBS (US Navy 1994c). Results of ongoing investigations are periodically updated in the BCP. A listing of ordnance storage locations on Mare Island is provided in Appendix J, Table J-10. Potential ordnance-containing areas are identified on Figure J-9. Specific areas on the island that could contain ordnance and their relationship to the proposed reuse areas are described below.

Small Arms Range Areas. The primary contamination hazards of the range area are lead, copper, lead oxides, and limited quantities of live small arms ammunition. The first small arms range was established in 1866 by the Marine Barracks, with the impact area near the present small arms range complex (Reuse Area 7). The second range area was established in 1904 to the north of the initial range in an area now occupied by the elementary school, parts of Farragut Village, and a large dredge spoils area (Reuse Area 6 and Wetlands). A new range complex was constructed in 1917 in the marshlands west of the North Gate, with the impact areas in the dredge spoils area (Reuse Area 1, Dredge Ponds, and Wetlands). This complex and an associated skeet range just south of the existing Navy exchange gas station (Reuse Area 1) were used until 1940 when the present small arms range complex was established. The present complex is surrounded by Navy housing, with the safety danger areas for bullets which might miss the range impact berms extending westward into dredge spoils ponds (Reuse Area 7 and Dredge Ponds). These range areas are on or near state reversionary land. An abandoned indoor small arms range is under Building 569 (Reuse Area 3). Use of the indoor range was discontinued in 1991 due to inadequate ventilation and high lead inhalation exposure hazard. The US Marine Corps also used an indoor range in Building M-37 for a short time (Reuse Area 8). Lead hazards in the firing range areas are under investigation as part of the PA/SI process. Cleanup standards will be established based on health risk assessments.

Ordnance Production Areas. At the south end of the island, pyrotechnic manufacturing, explosive ordnance filling, and demilitarization processes occurred between 1858 and 1975. These areas are suspected of being contaminated with ordnance items containing high explosives and residues from explosive compounds. The abandoned sewer laterals, wastewater collecting sumps, production building floors, and grounds around production buildings are all suspected contaminated areas (Reuse Areas 10 and 12).

Landfilling. Areas at the south end of the island were transformed from wetlands into the present flat terrain by a process called terraforming between

1854 and the early 1950s. Soil from the upland areas was used to make most of these geomorphic changes, but any substance that could be used for fill was utilized, including unexploded ordnance. Sites containing subterranean ordnance have been identified at various locations in these areas (Reuse Areas 10 and 12, and Wetlands). Approximately 5,000 pounds of ordnance material (Class 1, Division 1, 2, and 4), dating from 1864 to 1948, was excavated from an area adjacent to the beach, approximately 30 feet wide by 100 feet long by 10 feet deep (Reuse Area 12 and wetlands).

Dredge Ponds. These ponds, which are primarily located on state reversionary land, contain ammunition and ammunition residues dredged from the ammunition handling waterfront areas. Dredge spoils materials have been found to contain ammunition, ranging in size from small arms ammunition to 40 millimeter gun ammunition dating from 1864 through 1985 (Reuse Area 13, Dredge Ponds, and Wetlands).

Upland Magazine Area. These magazines which were used for ammunition storage are located on the uplands at the south end of Mare Island. The ordnance reservoir is also located in this area (Reuse Area 12). All suspected ordnance anomalies in the area have been cleared (Randell, 1997). No magazines are currently suspected of containing hazardous ordnance residue.

Western Magazine Area. This ordnance storage located on the west side of Mare Island was created using fill material taken from the uplands that was deposited over tidal sediments. Since this process used fill material that should have been free of ordnance, the primary concern was on those areas where ordnance may have been buried or dumped while the complex was in active use as a storage area.

Reserve Fleet Pier Area. This area, located on both surplus and state reversionary land, was constructed after World War II to berth fleet reserve ships. Explosive ordnance disposal (EOD) team divers training in this area have reported that unexploded ordnance in the water adjacent to the piers. The shoreline fill areas are also suspect (Reuse Area 1 and Wetlands).

Offshore Areas. This section is between Pier 24 on Mare Island Strait and Dike 14 at the south end of the island and includes the shore fill area down into the adjacent waters. Naval gun propellant (smokeless powder) and small arms ammunition continually wash up on the beach from buried sources. Unexploded ordnance (small arms and fixed gun ammunition fuses) has been discovered in the tidal area at low tide. Magnetometer surveys revealed more than 1,000 anomalies in the subject areas.

3.13.12 Radon

Radon is a colorless and odorless radioactive gas produced by radioactive decay of naturally occurring uranium to radium. Radium, of which radon gas is a by-product, is found in high concentration in rocks containing uranium, granite, shale, phosphate, and pitchblende. Atmospheric radon is diluted to insignificant concentrations. Radon that is present in soil, however, can enter a building through small spaces and openings, accumulating in enclosed areas, such as basements. The cancer risk caused by inhaling radon is currently a topic of concern.

The amount of radon is measured in picocuries per liter of air (pCi/L). The average indoor level is estimated to be 1.3 pCi/l, and about 0.4 pCi/L of radon is usually found in the outside air (EPA 1992). There are no laws that require testing and remediating for radon, but the EPA has made recommendations for both housing and schools. For short-term testing (2 to 90 days), "charcoal canister", "alpha-track," "electret ion chamber," "continuous monitor," and "charcoal liquid scintillation" detectors are the most commonly used. For Long-Term testing (more than 90 days), alpha-track and electret detectors are commonly used. A long-term test more accurately provides a year-round average radon level (US EPA 1992).

The *Application of Radon Reduction Methods* (US EPA 1988) summarizes the EPA-recommended action level of 4 pCi/L and guidance for action and recommends the following action schedule:

- For radon concentrations greater than 200 pCi/L, action be initiated within a few weeks;
- For radon concentrations in the range of 20 to 200 pCi/L, action be initiated within several months;
- For radon concentrations in the range of 4 to 20 pCi/L, action be initiated within a few years (the higher the radon level, the more urgent the need for action); and
- For radon concentrations less than 4 pCi/L, no action is specifically recommended; however, many individuals may elect to further reduce radon concentrations in the range of 1 to 4 pCi/L.

A radon facility screening survey was conducted at the shipyard in 1989 and 1990 under a Navy-wide program known as the Navy Radon Assessment and Mitigation Program (NAVRAMP) and based on guidelines from US EPA for radon measurements. The screening survey entailed monitoring a sampling of housing and nonhousing facilities at Mare Island (including off-site property).

Since some of the readings from these sample locations showed radon levels above the 4 pCi/L guideline, a full assessment of shipyard housing and nonhousing units was authorized.

A full assessment would have monitored all housing units, and those non-housing units meeting certain NAVRAMP program criteria (generally structures that are enclosed, occupied 4 or more hours per day, and in direct contact with the ground). The assessment began in 1992 but was terminated due to funding cutbacks in October of 1993. Detectors installed during the assessment were removed for processing. A preliminary summary of test results is as follows:

Nonhousing Assessment Results. Alpha-track detectors were installed for about a year in 152 of the 268 nonhousing buildings that met NAVRAMP program criteria for monitoring. Approximately 2,500 detectors were retrieved and processed for 150 of these buildings. Detectors were typically in place for about a year. Only 3 of the 150 buildings assessed indicated test results over 4 pCi/L. Building 1003 (currently a child development center) indicated a 4.2 pCi/L reading for the monitor in the adults' restroom; Building 485 (a single-story office building with a basement) indicated a 7.7 pCi/L reading on a monitor in the basement; and Building 746/746A (shipyard industrial lab) indicated readings of 10.6 pCi/L for a monitor in a below-grade utility tunnel, and 5.0 pCi/L for a monitor in a below-grade storage room.

Housing Survey Results. Due to late retrieval, funding, and handling complications, the housing assessment monitors will not be processed. The only available information is from the screening survey phase. The screening survey was done with alpha-track detectors exposed for a year, but interpreting the data requires some assumptions concerning detector/retrieval dates and locations because of conflicts in the field data. Of the approximately 116 housing units monitored in 1989-1990, only 2 monitors exceeded the 4 pCi/L guideline; Quarters Building 1238 showed a 4.7 pCi/L reading, and Quarters D showed a 8.6 pCi/L reading. For quarters Building 1238, subsequent confirmation tests performed in 1990 or 1991 with 3 electric detectors indicated readings below 0.6 pCi/L. For quarters D, confirmation test detectors indicated readings of 8.1 and 0.8 pCi/L. Quarters D is a historic mansion with a basement below the living quarters.

DOD policy regarding radon on BRAC properties is to ensure that any available and relevant radon assessment data pertaining to the BRAC property will be included in property transfer documents (US Navy 1995). No further radon assessments are planned.

3.13.13 Hazardous Materials and Waste Regulations

The following is a brief discussion of the major Federal laws and regulations that apply to hazardous materials and waste at Mare Island.

Resource Conservation and Recovery Act (RCRA). In response to the need to more closely regulate the ongoing handling, storage, transportation, and disposal of hazardous wastes, the US Congress passed RCRA, 42 U.S.C. §6901 *et seq.* of 1976. RCRA presents the Federal regulations for operating hazardous waste storage, treatment, and disposal sites. Prior to RCRA, the State of California had passed the Hazardous Waste Control Law (HWCL) in 1972. This law provides regulations that equal or exceed the Federal standards set by RCRA for hazardous waste management. California was given "interim authorization" to implement RCRA through enforcement of the HWCL. Final authorization for the state to implement RCRA was given in 1993. The responsible agency for enforcing RCRA and HWCL is the California Environmental Protection Agency, Department of Toxic Substances Control.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Originally passed in 1980, CERCLA, 42 U.S.C. §9601 *et seq.*, created national policies and procedures to identify and remediate sites previously contaminated by the release of hazardous substances. CERCLA formalized the process for identifying sites and for prioritizing the cleanup of sites through the NCP. The NCP contains criteria for evaluating sites that provide the basis for the preliminary assessment and site inspection. The evaluation that results is a priority ranking of the site that determines whether it should be placed on the NPL. Facilities placed on the NPL are commonly referred to as "Superfund" sites. As noted previously, Mare Island is not on the NPL. The US EPA has recommended the site to be included on the NPL, but the State of California has not agreed to the listing, and the US EPA, per law, will not list Mare Island on the NPL.

Community Environmental Response Facilitation Act (CERFA). Congress amended CERCLA in 1992 through the passage of CERFA, 42 U.S.C. §9601 note (West 1995). The purpose of CERFA is to expedite identifying uncontaminated real property, within closing Federal facilities, which offers the greatest opportunity for reuse and redevelopment. Uncontaminated, or "CERFA-eligible," property is defined as any real property on which no hazardous substances and no petroleum products were stored for 1 year or more, were known to have been released, or are disposed of. CERFA also provided clarification as to when "all remedial action has been taken." It also defined that all remedial action has been taken if construction and installation of an approved remedial design has been completed and the remedy has been demonstrated to the Administrator to be operating properly and successfully. Carrying out long-term pumping and treating or operation and maintenance

after the remedy has been demonstrated to be operating properly and successfully does not preclude the transfer of the property.

Identifying uncontaminated properties at Mare Island is the responsibility of the Navy. The US EPA is the regulatory authority for enforcing CERCLA, including the CERFA amendments. However, the EPA has joined with the California Environmental Protection Agency (CalEPA) in implementing CERFA for DOD facilities in California. CalEPA serves as the lead agency for closures of military bases, including Mare Island, not listed in the NPL. CalEPA generally follows EPA guidance for CERCLA sites.

CERFA requires a process and schedule for identifying uncontaminated sites. The final Mare Island basewide EBS, published in December 1994 and developed in cooperation with the regulatory community, identified 9 of 124 parcels as "CERFA-clean" parcels. These 9 parcels include the Obstacle Course (Parcel 07-A1), Coral Sea Village Residences (Parcels 08-B1 and 08-B6), Coral Sea Village Offices (Parcel 08-B3), Golf Course (Parcel 11-A2), Regional Park (Parcel 12-A4 and 12-A6), Historic Cemetery (Parcel 12-A7), and Roosevelt Terrace (Parcel 16-A). CalEPA has concurred with these identifications.

Of the remaining 115 parcels, 36 were identified as areas where storage, release, disposal, or migration of hazardous substances has occurred but where no response actions have been implemented, and 78 were identified as areas that are unevaluated or require additional evaluation. Detailed information on all the parcels can be found in the final Mare Island EBS.

For properties that cannot qualify as "CERFA-eligible," the CERFA law specifies that the deed for transferring subject property shall include a covenant warranting that all remediation necessary to protect human health and the environment with respect to any hazardous substance remaining on the property has been taken prior to the date of transfer and that any response action or corrective action found to be necessary after the date of transfer shall be conducted by the US.

Properties that contain or potentially contain contamination may be transferred prior to completion of environmental remediation only if conditions listed in the amended CERCLA regulations (CERCLA 120 as amended by Section 334 of the FY1997 Defense Authorization Act) are met. These conditions include the following:

- Agreement by the US EPA and the state that the property is suitable for the intended use and that the intended use will protect human health and the environment;

- Public notice and comment;
- Property use restrictions, if necessary, to ensure that human health and the environment are protected and that the necessary remedial actions can take place;
- Assurances from the Federal government that transfer of the property will not substantially delay response actions at the property and that the Federal government will continue any necessary response actions after transfer; and
- A Federal budget request for adequate funding to complete the remedial actions on schedule.

In all other circumstances, contaminated or potentially contaminated properties cannot be transferred until remediation is complete. However, the DOD has established a policy for leasing these properties. The DOD, with regulatory participation, can develop a site-specific or supplemental environmental baseline survey, or in specific cases, use the basewide EBS and a FOSL or FOST for the property. The FOSL may include specific land use restrictions to protect human health and the environment and to ensure government access for final investigations and remediation. A FOST may be issued only for properties on which all environmental remediation is complete, or that otherwise meet all the conditions of the amended CERCLA regulations noted above (CERCLA 120 as amended by Section 334 of FY1997 Defense Authorization Act).

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4.0 ENVIRONMENTAL CONSEQUENCES

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4. ENVIRONMENTAL CONSEQUENCES

This chapter describes the potential environmental consequences associated with the disposal and reuse of surplus Federal land at the former Mare Island Naval Shipyard. The disposal action would convey the property out of Navy ownership; the reuse action would result in adaptive reuse of existing structures and facilities, would allow for potential new construction, and would create new open space areas. The reuse plan identifies general categories and densities of land uses that would be allowed. Impacts are described at a general level of detail, consistent with the level of detail in the reuse plan. Future specific projects and development proposals will be subject to CEQA and the environmental review requirements set forth by Vallejo.

Impacts that may occur as a result of Federal actions on former shipyard lands being transferred to other Federal agencies and state reversionary lands are not analyzed as part of the proposed action. The proposed action considers only those impacts resulting from disposal and reuse of Federal surplus land. Impacts resulting from reuse of land being transferred to the USFWS, USCG, USFS, and US Army and land reverting to the State of California are addressed in Section 5.5, Cumulative Impacts.

For the purposes of NEPA analysis, direct environmental consequences or impacts are those associated with Navy disposal of Federal surplus property and the No Action Alternative, and indirect impacts are those associated with community reuse of Navy surplus property. The Navy's responsibility for disclosing indirect reuse-related environmental impacts is to address reasonably foreseeable impacts. However, the Navy cannot control reuse after the property is conveyed from Federal ownership and in support of local reuse actions. Therefore, implementation of mitigation measures for reuse-related environmental impacts would be the responsibility of the acquiring entity and not the responsibility of the Navy.

For every resource evaluated in this EIS/EIR, impacts of disposal and of each reuse alternative, including the No Action Alternative, are projected to 2020. Complete implementation of each reuse alternative is assumed in determining impacts.

Consistent with the discussion of the affected environment in Chapter 3, this chapter has been organized by resource for evaluating the impacts of the reuse actions on the individual resources. The impacts discussion for each resource includes an introduction, indicating the criteria used to determine whether an impact would be significant, an impacts summary table, and a description of planning issues and processes associated with each resource. Where appropriate, analysis methodology and assumptions are described.

Each resource section identifies impacts of each of the reuse actions on the specific resources and also identifies any impacts associated with the disposal action. For each impact, a determination has been made whether it would constitute a significant or nonsignificant impact. The impacts resulting from Navy disposal and community reuse actions are summarized in a table at the beginning of each resource section. Impacts are categorized by significant and not mitigable, significant and mitigable, nonsignificant, and no impact. The no impact category also includes beneficial impacts. A summary of significant impacts and mitigations has been provided in Chapter 2, Table 2-9 of this document.

Mitigation measures are identified for impacts determined to be significant. Significant impacts and mitigation measures are numbered, while nonsignificant impacts (including beneficial impacts) are listed separately from the significant impacts and are not numbered. Unavoidable significant environmental impacts (i.e., impacts that cannot be mitigated to a nonsignificant level) also are identified. Processes that would be implemented through the local and regional planning processes or through implementing the alternatives that would address other resources and issues are described wherever applicable. Implementation of mitigation measures for reuse environmental impacts, including the costs of mitigation, is the responsibility of the entity acquiring the property.

4.1 LAND USE

The disposal action, the proposed reuse alternatives, and the No Action Alternative are each evaluated for their potential to cause substantial land use impacts. Impacts to on-island and surrounding land uses are evaluated for each alternative and are compared to preclosure conditions. Demolition and construction impacts also are considered when evaluating the potential land use impacts of each alternative. The reuse plan provides a general picture of future land uses at Mare Island and outlines a project-specific planning process that could occur as part of the reuse plan implementation.

Region of Influence

The ROI applicable to the land use discussion includes all of Mare Island, the off island former shipyard properties, the portion of Vallejo within a half mile of Mare Island Strait, and the portion of Solano County within a half mile of the shipyard.

Significance Criteria

Land use impacts would occur through changes to land uses, through demolishing existing structures, and through constructing buildings and

infrastructure. The proposed reuse actions could cause a significant impact on land use if implementing them would conflict with established residential, recreational, and educational uses in the project area, would disrupt or divide the established physical land use configurations, or would substantially alter the present or planned land use. Table 4-1 summarizes the land use impacts of disposal and reuse.

TABLE 4-1
SUMMARY OF LAND USE IMPACTS AND SIGNIFICANCE

IMPACT ISSUES	NAVY ACTIONS		COMMUNITY REUSE ALTERNATIVES		
	Disposal	No Action Alternative	Reuse Plan	Medium Density	Open Space
Incompatibility of Reuse Area 10 residential and retail development with regional park	○	○	◑	○	○
Rifle range conflicts with residential and recreational uses	○	○	◑	◑	○
Southern crossing bridge impacts on Reuse Area 10 proposed land uses and conservation easement	○	○	◑	○	○
Reuse Area 10 residential and retail uses compatibility with adjacent to Tideland Trust lands	○	○	◍	○	○
Interference or removal of dredge slurry pipelines	○	○	◑	◑	◍
Introduction of new businesses on Mare Island	○	○	◍	◍	◍
Demolition of structures and provision of open space	○	○	◍	◍	◍
Provision of regional park and recreational facilities	○	○	◍	◍	◍
Southern crossing bridge impacts on off-island community land use	○	○	●	○	○
Roosevelt Terrace reuse land use impacts	○	○	◍	◍	◍
Main Entrance reuse land use impacts	○	○	◍	◍	◍
Railroad spur reuse land use impacts	○	○	◍	◍	◍

LEGEND:

Level of Impact

● - Significant and not mitigable
◑ - Significant and mitigable
◍ - Nonsignificant
○ - No impact

The consistency of the proposed reuse actions with land use goals and policies of Vallejo and regional land use plans (e.g., the Bay Plan and Seaport Plan) and with Tideland Trust land uses also are considered when evaluating the land use impacts of the proposed reuse actions because these goals and policies establish the planned land uses for the island and mainland facilities. Since the disposal action would convey jurisdiction of the surplus property at Mare Island out of

Federal ownership, future development of these areas of the island would be under the city's jurisdiction. To ensure consistency between the selected reuse action and the city's plans and policies, existing land use regulatory documents would need to be revised to incorporate the selected development plan for the island. Additionally, the city would need to coordinate with other agencies having land use regulatory authority over the island. The issues and process for achieving this consistency are described below.

Planning Issues and Process

Vallejo Plans and Policies

Prior to closure of the Mare Island Naval Shipyard, the shipyard was under exclusive jurisdiction of the US Navy. Since closure of the base, the shipyard is under concurrent jurisdiction of the Navy and Vallejo. Following conveyance of Federal surplus land to Vallejo or other non-Federal entities, future development of portions of the island and the shipyard's mainland facilities would be under city jurisdiction. Vallejo's existing general plan land use designation for the island (employment) does not encompass all the proposed reuse land uses and does not define development opportunities and constraints for the land use designations. The Vallejo General Plan designations for the mainland reuse properties are consistent with the proposed reuses.

To achieve consistency between the selected reuse action and city policies it would be necessary to amend the Vallejo General Plan to include Mare Island in more detail prior to approving future land use actions. The amendments would need to be based on the goals and policies of the selected reuse action while maintaining consistency with the current goals, policies, and land use designations in the Vallejo General Plan. Land use designations considered in the General Plan Amendment could include, but not be limited to, residential (low, medium, and high), commercial (waterfront and retail), employment (industrial, general commercial services, and professional office complexes), and open space (community parks and wetlands).

Following the amendment of the Vallejo General Plan, a specific plan or planned development master plan should be developed. This plan would more precisely identify the distribution, location, and extent of future land uses. It also would identify the distribution, location, extent, and intensity of the infrastructure required to support the land uses, would establish the development and conservation standards, and would include a program for carrying out reuse.

San Francisco Bay Conservation and Development Commission (BCDC)

The San Francisco BCDC has bay and shoreline jurisdiction at the shipyard. The bay jurisdiction includes all areas that are subject to tidal action up to the mean high tide line. The shoreline band jurisdiction includes all areas 100 feet inland and parallel to the mean high tide line (BCDC 1994). Recent revisions to the Bay Plan have removed the port priority use designation from the shipyard, but the water-related industry uses are retained for the 10 dredge disposal ponds. The policy note in the Bay Plan proposes that the 3 northernmost ponds be used to provide wetland habitat for the salt marsh harvest mouse to mitigate any potential adverse impacts from future use of the other 7 ponds for dredged material disposal and rehandling. The policy note suggests that wetland restoration would be managed by the USFWS as part of the San Pablo Bay National Wildlife Refuge.

Bay Plan policies for Mare Island shore areas not proposed for priority uses are that these areas be used for any purpose that uses the bay as an asset and in no way affects the bay adversely. The proposed reuses for the eastern shipyard area would not appear to conflict with these policies. However, a full analysis of the proposed uses with the Commission laws and policies would not be possible until project specific details are available and considered. This would occur after property conveyance.

The Reuse Plan Alternative, Medium Density Alternative, and Open Space Alternative would not preclude use of industrial space or dry docks for port purposes. However, building construction, demolition, and installation of infrastructure could affect dredge disposal transport pipelines now on the island. As described in the water resources sections (3.7 and 4.7), dredging may be required in the future to allow some continued port-related uses.

The dredge material disposal ponds have retained the water-related industry use designation for possible dredged material disposal, pending the outcome of the LTMS study. Should the area be retained as a dredge disposal area, it would be consistent with this designation; however, should the 10 active dredge material disposal ponds be allowed to revert to wetlands, this action would not be consistent with the designation. Future uses of the dredge disposal areas, which are almost entirely located on state reversionary land, are discussed in Section 5.5 as cumulative impacts.

In compliance with the Coastal Zone Management Act (CZMA) of 1972, 16 U.S.C. §3501 *et seq.*, coastal consistency documentation was submitted by the Navy to BCDC on May 19, 1997 for the disposal of the former Mare Island Naval Shipyard. The documentation supported the Navy determination that the disposal of the former shipyard would be an administrative title transfer action having no effect on the adjacent coastal zone. Following conveyance of

Federal surplus land to Vallejo or other non-Federal entities, projects within BCDC's jurisdiction and undertaken by non-Federal entities, such as city or private developers, may require a BCDC permit. These projects could include public access improvements and southern crossing development. On August 1, 1997, BCDC issued a Letter of Agreement, concurring with the Navy's consistency documentation.

State Tideland Trust

As described in Chapter 3, certain lands at Mare Island have been identified as public trust land subject to use restrictions by the State Tideland Trust. Figure 3-5 identifies the location of Tideland Trust land at Mare Island, as determined by the Navy (US Navy 1994i). The State of California has identified an additional area of Mare Island north of the causeway (Reuse Area 1) as public trust land subject to use restrictions.

Land Use Displacement

Development of the southern crossing could displace existing residences or businesses in Vallejo. Should existing land uses be displaced, a relocation and assistance program would be required by the California Relocation Assistance and Property Acquisition Act of 1971, Government Code 7260 *et seq.* This act establishes polices for property acquisition, as described in Section 3.1. The process set out in the act is initiated following the procurement of funding for a public project.

4.1.1 Disposal

The disposal action would not involve changes to the physical environment because it is essentially a transfer of title and would not result in direct impacts to land use. However, future land uses would be restricted in areas covered by the conservation easements established to protect sensitive habitat at Mare Island. These easements would be executed prior to the conveyance of the affected property to Vallejo or other non-Federal entity, thereby restricting development in these areas. It is expected that the USFWS would hold the easement and Vallejo or other non-Federal entity would take ownership of the underlying fee. These easements are included as part of the reuse plan alternatives.

4.1.2 Reuse Plan Alternative

Mare Island Land Uses

Impact 1. A significant and mitigable land use impact would result from developing Reuse Area 10 adjacent to the proposed regional park.

Development would replace industrial buildings with residential and retail structures, which would not be consistent with the proposed regional park adjacent to this reuse area. Proposed development would include multifamily residential units at a density of 8 to 15 dwelling units per acre and a 20,000 square foot retail center. This development would require demolishing structures and constructing the residential units and retail center.

Mitigation 1. Reduce or change the development in this area to uses more compatible with public open space. Modifications could include using Reuse Area 10 to provide support services to the proposed regional park, reducing residential densities, and eliminating the retail center. Implementing these mitigations would reduce the impact to a nonsignificant level.

Impact 2. A significant and mitigable land use impact would result from relocating the rifle range from Reuse Area 7 to Reuse Area 12, the proposed regional park. The proposed relocation would conflict with the established and proposed future recreational uses of this area and would introduce noise, create safety concerns, and introduce structures within a currently undeveloped environment.

Mitigation 2. Remove the rifle range from Mare Island. Implementing this mitigation would reduce the impact to a nonsignificant level.

Impact 3. A significant and mitigable land use impact would result from construction of the southern crossing bridge at the southern end of Mare Island in Reuse Area 10. If not carefully sited, the proposed land use could conflict with the planned residential and open space land uses at the southern end of Mare Island. The bridge could also require construction within the conservation easement, which would adversely impact sensitive biological resources (see Section 4.7 Biological Resources for a more detailed discussion of these impacts). Construction of the new bridge would be required to comply with all applicable requirements and environmental laws. It would also require substantial consultation and coordination with environmental resource protection and permitting agencies as identified in Chapter 2.

Mitigation 3a. Do not construct the southern crossing at this location. Implementing this measure would reduce the impact to a nonsignificant level.

Mitigation 3b. Design the southern crossing to minimize impacts to residential and commercial development by careful siting and providing adequate noise attenuation and visual buffers. Complete required consultation process to assure protection of sensitive biological resources. Implementing these measures would reduce the impact to a nonsignificant level.

Impact 4. A significant and mitigable impact would result from redevelopment interfering with or removing dredge slurry pipelines. Redevelopment in various reuse areas could interfere with or require the removal of dredge slurry pipelines. Introducing structures or infrastructure in Reuse Areas 3, 4, 5, and 10 could interfere with existing infrastructure that transports dredge slurry through these areas. In addition, open space uses in Reuse Area 12 could require removing or relocating dredge slurry pipelines.

Mitigation 4. Design all development plans for Reuse Areas 3, 4, 5, 10, and 12 to allow continued transfer of dredged material to dredge disposal areas, unless use of the dredge disposal areas is terminated. Implementing this mitigation would reduce the impact to a nonsignificant level.

Nonsignificant Impacts

- Proposed reuse activities in all areas except Reuse Areas 11 and 12 would introduce new businesses onto Mare Island. Except for the land uses proposed in Reuse Area 10, this change would not be a significant land use impact because the reuse activities would not substantially alter the present facilities or planned land uses in these areas. The proposed reuses for these areas are intended to be compatible with the general types of existing facilities (e.g. industrial, commercial, residential) and would use existing buildings to house the reuse activities. No mitigation is required.

- Construction of the southern crossing bridge between Vallejo and Reuse Area 5 would require widening of 14th Street and potential demolition of structures located within the access corridor. This would not appear to be a significant land use impact because development of the bridge access ways would not substantially alter the already industrially developed character of the area and would not be incompatible with the proposed industrial uses for the area. Following identification of a precise location and design for the southern crossing, further project specific environmental documentation will be required.

- The proposed residential units in Reuse Area 10 would be located near lands subject to the Tideland Trust. Uses within the portion of Reuse Area 10 subject to the Tideland Trust must be used for trust-related purposes described in Section 3.1.4. No mitigation is required.

- The projected demolition of approximately 3.3 million square feet of building space could substantially reduce the amount of developed area on the island. This would be a beneficial land use impact because the resulting reduction to the number of buildings would create more open space and would remove substandard buildings that would not be appropriate for reuse. Proposed demolition would be consistent with the

land uses planned for the area and would not disrupt existing recreational uses. No mitigation is required. See also Section 4.4, Cultural Resources, for further analysis of the impact of building demolition.

- The southern hill area (Reuse Area 12) would be preserved as a regional park. This area is predominantly surplus land, with its western edge located on state reversionary land. This would be a beneficial land use impact. Developing the hill as a regional park would be consistent with the existing open space character of the area and would provide additional open space opportunities to residents of Vallejo and outlying areas. No mitigation is required.

- Existing recreational facilities would be reused and additional playing fields would be developed in several reuse areas. This would be a beneficial impact. Reuse of these facilities would provide additional recreational opportunities to residents of Vallejo and outlying areas. No mitigation is required.

- Converting the area now used as a rifle range (Reuse Area 7) to recreational fields would continue recreational use of the area and would be compatible with proposed residential reuse of the existing residential units. This would be a beneficial land use impact. No mitigation is required.

Surrounding Land Uses

Impact 5. A significant and not mitigable land use impact would result from construction of the southern crossing bridge in Vallejo. Construction of the southern crossing bridge could result in demolition or relocation of existing buildings and structures within and adjacent to the proposed bridge. Additionally, bridge construction could substantially alter existing land use patterns and divide the existing physical arrangement of this area of Vallejo.

Mitigation 5. Design the southern crossing to minimize displacement of existing residential and commercial uses. Provide adequate noise attenuation and visual buffers to reduce impacts to surrounding land uses. These measures would reduce impacts but not to a nonsignificant level.

Roosevelt Terrace and Main Entrance

Nonsignificant Impacts

- Removing up to half of the existing buildings at Roosevelt Terrace and introducing additional landscaping would be compatible with existing and surrounding land uses and would result in a beneficial land use impact.

Under the Reuse Plan Alternative, additional landscaping, recreation areas, and parking spaces would be provided around the remaining buildings. This would make the area a more attractive place to live and would provide housing at a density more compatible with the surrounding neighborhoods. No mitigation is required.

- Reusing the main entrance for retail or commercial office space would be compatible with the surrounding land uses and therefore would not be a significant impact. The existing paved area striped for parking would provide sufficient spaces to serve parking demand generated by the proposed reuses. No mitigation is required.

The Railroad Spur

Nonsignificant Impacts

- Under the Reuse Plan Alternative use of the railroad spur could increase over historic use. The railroad spur right-of-way is not fenced and passes by a school playground and through residential areas. Increased use of this spur and the associated increase in safety risk would not be compatible with these adjacent land uses, which would be an adverse but not significant impact. No mitigation is required; however, it is recommended that signs be posted adjacent to the right-of-way stating that it is private railroad property and that trespassing is therefore prohibited.

4.1.3 Medium Density Alternative

Under this alternative, Reuse Area 10 would not be developed, and the southern crossing would not be constructed. Impacts related to these 2 actions would therefore not occur under this alternative. Development would be limited to reuse of existing structures, although some structures would be demolished.

Mare Island Land Uses

Impact 1. A significant and mitigable land use impact would result from retaining the rifle range at its current location (Reuse Area 7) between 2 areas containing residential units. Retaining the rifle range at this location would not be compatible with the proposed residential uses for these areas. The proposed reuse of the range as a civilian facility available for law enforcement training could increase usage of the range, particularly on the weekends when most of the residents of the area would be at home. Existing buffers between the rifle range and nearby residential units are minimal, and noise levels would be intrusive (see Section 4.11). There could also be safety issues associated with the proximity of the range to residences (see Section 4.13).

Mitigation 1. Remove the rifle range from Mare Island. Implementing this mitigation would reduce impacts to a nonsignificant level.

Impact 2. A significant and mitigable land use impact would result from redevelopment interfering with or removing dredge slurry pipelines, as described for the Reuse Plan Alternative.

Mitigation 2. Design all development plans for Reuse Areas 3, 4, 5, and 12 to allow continued transfer of dredged material to dredge disposal areas, unless use of the dredge disposal areas is terminated. Implementing this mitigation would reduce the impact to a nonsignificant level.

Nonsignificant Impacts

- Proposed reuse activities in all reuse areas except Reuse Areas 10, 11, and 12 would introduce new businesses onto Mare Island, which would not be a significant impact. This impact would be less than that described for the Reuse Plan Alternative because Reuse Area 10 would not be developed under this alternative. No mitigation is required.

- Under this alternative the projected demolition of approximately 5.9 million square feet of building space could substantially reduce the amount of developed area on the island. This impact would be beneficial, as described for the Reuse Plan Alternative. No mitigation is required.

- Under this alternative, as under the Reuse Plan Alternative, the southern hill area (Reuse Area 12) would be preserved as a regional park. This would be a beneficial impact. No mitigation is required.

- Under this alternative, as under the Reuse Plan Alternative, existing recreational facilities would be retained and additional facilities would be developed. This would be a beneficial impact. No mitigation is required.

Roosevelt Terrace and Main Entrance

Nonsignificant Impacts

- The reuse proposal for Roosevelt Terrace would reduce the density and would increase landscaping, as described for the Reuse Plan Alternative. This would be a beneficial impact. No mitigation is required.

- The reuse proposal for the main entrance area would be compatible with surrounding land uses, as described for the Reuse Plan Alternative, and would not be a significant impact. No mitigation is required.

The Railroad Spur

Nonsignificant Impacts

- The increased safety risk associated with the increased use of the railroad spur and its location adjacent to residential and school uses would be adverse but not significant, as described under the Reuse Plan Alternative. However, the posting of no trespassing signs along the right-of-way is recommended. No mitigation is required.

4.1.4 Open Space Alternative

Under this alternative, Reuse Area 10 would not be developed, and the southern crossing would not be constructed. Therefore, impacts related to these actions would not occur under this alternative. Additionally, the golf course and rifle range would be removed from the island, and the dredge disposal area would immediately revert to wetlands.

Nonsignificant Impacts

- Under this alternative, proposed reuse activities in all reuse areas, except Reuse Areas 7, 10, 11, and 12, would introduce new businesses onto Mare Island, which would not be a significant impact, as described for the Reuse Plan and Medium Density Alternatives, No mitigation is required.

- Under this alternative, the projected demolition of approximately 6.0 million square feet of building space could substantially reduce the amount of developed area on the island. This impact would be beneficial, as indicated for the Reuse Plan Alternative and Medium Density Alternative. No mitigation is required.

- Under this alternative, as under the Reuse Plan and Medium Density Alternatives, the southern hill area (Reuse Area 12) on the island would be preserved as a regional park. This would be a beneficial impact. No mitigation is required.

- Under this alternative, as under the Reuse Plan and Medium Density Alternatives, existing recreational facilities would be retained. However, the golf course and rifle range would be converted to open space, resulting in a decrease in the amount of developed recreation and an increase in the amount of open space. This would be a beneficial impact. No mitigation is required.

- Under this alternative, the rifle range would be removed from the island, and the area would be converted to recreational fields. Converting the area to recreational fields would be a beneficial land use impact in that it would be compatible with the proposed reuse of the surrounding residential units. No mitigation is required.

Roosevelt Terrace and Main Entrance

Nonsignificant Impacts

- The reuse proposal for Roosevelt Terrace would reduce the density and would increase landscaping, as described for the Reuse Plan Alternative. This would be a beneficial impact and no mitigation is required.

- The reuse proposal for the main entrance area would be compatible with surrounding land uses, as described for the Reuse Plan Alternative, and would not be a significant impact. No mitigation is required.

The Railroad Spur

Nonsignificant Impacts

- The increased safety risk associated with the increased use of the railroad spur and its location adjacent to residential and school uses would be adverse but not significant, as described under the Reuse Plan Alternative. No mitigation would be required, but posting no trespassing signs along the right-of-way is recommended.

4.1.5 No Action Alternative

Under this alternative, surplus Federal property at the shipyard would continue under Navy ownership in an inactive status with essential security and maintenance operations only. The USCG, USFWS, US Army, and USFS would operate their facilities on the island separately from the caretaker activities.

Nonsignificant Impacts

- There would be minimal use of on-island and mainland property and facilities under this alternative, resulting in no adverse environmental impact. No new construction and minimal demolition would occur. No mitigation is required.

- Under this alternative, minimal public access would be available to the on-island open space and recreational areas. This would represent no change over the preclosure condition and would therefore not result in an adverse environmental impact. No mitigation is required.

4.2 SOCIOECONOMICS

This socioeconomic analysis addresses the impacts on jobs, income, population, housing, schools, and recreation from the disposal and reuse of Federal surplus land at the shipyard.

Region of Influence

The ROI for socioeconomic impacts varies, depending on the type of impact being analyzed. For employment, housing and population the ROI includes Napa and Solano counties. The housing analysis is supplemented by Vallejo data since many of the employees at Mare Island would live in Vallejo and would attend Vallejo schools. The ROI for recreation and schools is limited to Vallejo, although it is recognized that other Bay Area residents would take advantage of the regional recreation facilities proposed under the reuse alternatives.

Methodology

To determine the impact of disposal and reuse on the regional economy, this EIS/EIR evaluates the increase in economic activity that could occur under each reuse alternative between 1996 (the most current year for which data are available) and 2020. Year 2020 projections of future jobs, income, population and household projections were developed by extending the 2015 projections published in ABAG *Projections 94*, assuming that the annual average growth rate between 2015 and 2020 would be the same as the rate between 2005 and 2015.

The effects of each alternative are evaluated first by the number of jobs that would be generated since the numbers and types of jobs generated affect other socioeconomic conditions. When there are job opportunities, new residents move in, adding to the regional population. New households result in additional demand for local government services, including recreation and schools. Full buildout of each reuse alternative is assumed in this analysis.

The impact analysis estimates only those long-term jobs that likely would be directly generated by the reuse alternatives. Indirect jobs also would be generated, but it is speculative to predict how many of these jobs are likely to be contained within Vallejo. Construction jobs also would be generated as new facilities are built on the property. However, it is not possible to predict how many construction jobs would be created; such figures would become available later, during the specific plan process.

Significance Criteria

The significance of socioeconomic impacts is related to the social and economic characteristics of the region and to the period in question. All of the reuse alternatives would result in beneficial new employment and income growth within Vallejo and the ROI. In general, the more jobs generated, the more beneficial the impact.

Population and housing growth are the natural consequences of the employment level of a region and are considered neither beneficial nor adverse impacts of the disposal and reuse actions. Population and housing growth can be perceived either positively or negatively, depending on the values and point of view of the people considering the impacts. Population and housing growth could lead to secondary impacts that may be adverse, such as the potential traffic and infrastructure improvements that growth may induce. These secondary impacts are discussed in Section 5.4, Growth Inducing Impacts.

With respect to schools and recreation, impacts that lead to physical changes (e.g., additional recreational facilities and school capacity) are considered beneficial. However, changes such as additional enrollments resulting in school overcrowding are considered adverse. Changes in annual operating budgets and cash-flows (fiscal impacts) are not considered to be environmental impacts and are therefore not discussed in this section.

Table 4-2 summarizes socioeconomic impacts that would result from disposal and reuse of the former Mare Island Naval Shipyard properties.

TABLE 4-2
SUMMARY OF SOCIOECONOMIC IMPACTS AND SIGNIFICANCE

IMPACT ISSUES	NAVY ACTIONS		COMMUNITY REUSE ALTERNATIVES		
	Disposal	No Action Alternative	Reuse Plan	Medium Density	Open Space
Effects on employment and income	○	○	◐	◐	◐
Effects on population and housing	○	○	◐	◐	◐
School Enrollment at Federal Terrace School	○	○	◑	◑	◑
School Enrollment at Mare Island Elementary School	○	○	◑	◑	◐
Expansion of recreational opportunities	○	○	◐	◐	◐

LEGEND:
Level of Impact
● = Significant and not mitigable
◑ = Significant and mitigable
◐ = Nonsignificant
○ = No impact

4.2.1 Disposal

Regional Economy - Employment

Disposal would create no additional employment in the ROI and therefore would have no effect on jobs.

Population and Housing

As disposal would not involve construction or reuse of housing, it would have no effect on housing demand or population levels.

Schools (K-12)

Disposal would have no impact on student enrollments since it would not increase or decrease the school-age population.

Recreation

Disposal would result in no change to existing recreation opportunities.

4.2.2 Reuse Plan Alternative

Regional Economy - Employment

Nonsignificant Impacts

- Under the Reuse Plan Alternative, employment-generating land uses at Mare Island would create an estimated 9,669 direct jobs in Vallejo and the ROI by 2020 (Table 4-3). Approximately 4,045 jobs generated, or 42 percent, would be blue collar. This would be a beneficial impact, and no mitigation is required.

  Job growth in Vallejo, projected to 2020 under the Reuse Plan Alternative, would increase by 37.1 percent (Table 4-4). Projected job growth in the ROI under this alternative would be about 4.7 percent.

Population and Housing

Nonsignificant Impacts

- At buildout, this alternative would provide 1,786 dwelling units, which would represent a substantial addition to the housing stock of Vallejo. Table 4-5 shows the number of dwelling units planned for Mare Island. Of the1,786 units, 1,036 are existing units that would be available to civilian families, and 750 are condo units

TABLE 4-3
DIRECT EMPLOYMENT IMPACTS

	Unit of Measure	Reuse Plan Alternative	Medium Density Alternative	Open Space Alternative	No Action Alternative[1]
Nonresidential Land Uses					
Industrial space	sq ft	4,282,300	1,952,500	1,847,100	-
Retail, office, & educational space	sq ft	1,495,300	1,134,000	1,056,700	-
Total nonresidential space	sq ft	5,777,945	3,086,500	2,903,800	8,900,000
Parks, dev. rec. & golf course	acres	365	319	55	-
Number of Jobs Generated at Build-out					
Industrial space		5,394	2,248	2,123	-
Retail, office, & educational space		4,067	2,819	2,553	-
Park, golf & open space		208	206	128	-
Total employment		9,669	5,273	4,804	80
Type of Jobs Generated[2]					
Blue collar jobs[3]		4,045	1,686	1,592	-
Blue collar jobs as % of total jobs		42%	32%	33%	
White collar jobs		5,624	3,587	3,212	-
White collar jobs as % of total jobs		58%	68%	67%	-

[1] Under the No Action Alternative, approximately 80 people are assumed to be employed for maintenance, security, and other caretaker functions.
[2] Many different types of industries are targeted for Mare Island reuse, so it is difficult to determine precisely how many jobs would belong in the blue collar category. All industries generally include some administrative and clerical positions.
[3] For estimating purposes, employment derived from light and heavy industrial users is assumed to be 75 percent blue collar.

Source: Vallejo 1994c; ABAG 1993; ERA

TABLE 4-4
ANALYSIS OF JOB IMPACTS IN VALLEJO AND THE ROI

	Reuse Plan Alternative	Medium Density Alternative	Open Space Alternative	No Action Alternative
Net change in jobs due to reuse:				
Number of civilian jobs at the shipyard in 1996	80	80	80	80
Number of jobs generated by the Reuse Alternative	9,669	5,273	4,804	80
Net change in jobs due to Mare Island Reuse	9,589	5,193	4,724	0
Job Impact in Vallejo (sphere of influence):				
Projected job growth in Vallejo (SOI) between 1995 and 2020	24,296	24,296	24,296	24,296
Percentage change in jobs due to reuse as percent of job growth in Vallejo (SOI)	37.1%	19.0%	17.1%	0.0%
Job impact in the ROI (Solano and Napa counties):				
Projected job growth in the ROI between 1995 and 2020[1]	189,958	189,958	189,958	189,958
Percentage change in jobs due to reuse as percent of job growth in the ROI	4.7%	2.4%	2.2%	0.0 %

Source: Vallejo 1994c; ABAG 1993; ERA

TABLE 4-5
POPULATION AND HOUSING PROJECTIONS

	Unit of Measure	Reuse Plan Alternative	Medium Density Alternative	Open Space Alternative	No Action Alternative4
Number of dwelling units					
Single-family historic	unit	52	52	52	52
Residential duplex[1]	unit	431	431	361	431
Multifamily condo	unit	750	-	-	-
Multifamily[2]	unit	553	513	430	600
Total dwelling units		1,786	996	843	1,083
Dormitory beds	bed	602	602	557	2,000
Population generation at build-out	Population per unit				
Single-family historic	2.8	148	148	148	-
Residential duplex	3.0	1,289	1,289	1,047	-
Multifamily condo	2.4	1,800	-	-	-
Multifamily rental[2]	2.4	1,313	1,218	1,021	-
Dwelling unit population		4,550	2,655	2,216	-
Dormitory beds[3]		525	487	487	-
Total population		5,075	3,142	2,703	-

[1] Under the Open Space Alternative, approximately 70 units on state reversionary land would be demolished.
[2] Includes 300 housing units at Roosevelt Terrace, located off-base in Vallejo, and new construction units.
[3] Dormitory population under the Reuse Plan Alternative and reuse alternatives is derived from the Mare Island Reuse Plan, Table 4-8
4 These units reflect current assets, but would not be occupied.

Source: Vallejo 1994c; ERA

that would represent new home construction. The dwelling units would house approximately 5,075 people. The Mare Island housing units would represent 60.2 percent of the new households projected for Vallejo (Table 4-7).

Increases in population would come primarily from people attracted to the ROI because of jobs created under the Reuse Plan Alternative. The analysis assumes that approximately 83 percent of future Mare Island employees would live in the ROI, adding approximately 21,327 residents. This increase in population would be less than indicated if unemployed shipyard workers who remained in the area were employed at Mare Island under the reuse plan. The increase in year 2020 regional population would represent a 6 percent increase to the total ROI population (Table 4-6). No mitigation is required.

TABLE 4-6
ANALYSIS OF POPULATION IMPACTS IN THE ROI

	Reuse Plan Alternative	Medium Density Alternative	Open Space Alternative	No Action Alternative
Net change in civilian population due to reuse:				
Gain in population due to dwelling unit occupancy under reuse[1]	5,075	3,142	2,703	
Gain in population due to new jobs (workers) in the ROI due to reuse[2]	7,483	3,835	3,445	-
Gain in population due to workers' dependents[3]	13,844	7,094	6,374	-
Total net change in population due to Mare Island reuse[4]	21,327	10,929	9,819	-
Projected change in population in the ROI between 1995 and 2020[5]	355,246	355,246	355,246	355,246
change in the ROI	6.0%	3.1%	2.8%	0.0%

[1] Assumes units that enter the housing market will be occupied either by new residents or existing Vallejo residents whose homes would not remain vacant in the long run.
[2] Assumes 83 percent of jobholders will live in the ROI and will occupy available housing units due to reuse.
[3] Average household size for the ROI in 2020 is 2.85 persons per household (weighted average for Solano & Napa counties).
[4] Assumes available housing units due to reuse or households changing residences will be occupied by future Mare Island employees.
[5] In March 1995, ABAG revised its 1995 population estimates for Solano County downwards by 10,000 residents. This revision incorporates decreases in population due to anticipated reduction in shipyard employment from 2,941 to 80 workers.

Source: Vallejo 1994c; Projections 94, ABAG 1993; ERA

TABLE 4-7
ANALYSIS OF HOUSING IMPACTS IN VALLEJO AND THE ROI

	Reuse Plan Alternative	Medium Density Alternative	Open Space Alternative	No Action Alternative
Net change in housing supply due to reuse:	1,786	996	843	-
Impact on housing supply in Vallejo:				
Projected change in no. of households (housing units) between 1995 and 2020 in Vallejo	2,969	2,969	2,969	2,969
Mare Island housing units as % of new households in Vallejo	60.2%	33.5%	28.4%	0.0%
Impact on housing supply in the ROI (Napa and Solano counties):				
Projected change in no. of households (housing units) between 1995 and 2020 in the ROI	103,920	103,920	103,920	103,920
Mare Island housing units as % of new households in the ROI	1.7%	1.0%	0.8%	0.0%

Source: Vallejo 1994c; Projections 94, ABAG 1993; ERA

Schools (K-12)

The Reuse Plan Alternative would create housing and jobs that would generate an estimated 2,271 students in grades K-12 over the 25-year period (Table 4-8). Of the 2,271 students, approximately 771 students would be the children of people living on-island and 1,500 would be the children of Mare Island employees living in Vallejo. Of the 771 students, 726 would live on Mare Island, and 45 students would live off-island at Roosevelt Terrace.

TABLE 4-8
IMPACT ON THE VALLEJO UNIFIED SCHOOL DISTRICT

	Reuse Plan Alternative	Medium Density Alternative	Open Space Alternative	No Action Alternative
Number of housing units				
Single-family historic	52	52	52	-
Residential duplex	431	431	361	-
Multifamily condo	750	-	-	-
Multifamily rental	553	513	430	-
Total dwelling units	1,786	996	843	-
School enrollment from housing units[1]				
Single-family	328	328	297	-
Condominiums	360	-	-	-
Apartments	83	77	71	-
Subtotal enrollment	771	405	368	-
School enrollment due to employment				
Total employment	9,669	5,273	4,804	80
Est. no. of employees who live in Vallejo[2]	3,191	1,740	1,585	26
Est. no. of school children in Vallejo[3]	1,500	818	745	12
Total Enrollment	2,271	1,223	1,113	12

Yield Factors	Grades K-6	Grades 7-9	Grades 10-12
Single-family	0.39	0.15	0.14
Condominiums	0.30	0.10	0.05
Apartments	0.10	0.03	0.02

[1] Enrollment yield factors per type of home were provided by the VUSD
[2] Assumes that 33% of Mare Island employees live in Vallejo (based on historic residential distribution).
[3] For reuse alternatives, student enrollment is estimated using 1989 employee-student ratio of 47%. In 1989, the shipyard employed approximately 4,888 Vallejo residents; student enrollment associated with Mare Island was 2,296 students.

Source: Vallejo Unified School District; Vallejo 1994c; ERA

Impact 1. A significant and mitigable impact would result from reuse of Roosevelt Terrace. The additional students generated by reuse of Roosevelt Terrace would exceed the capacity of Federal Terrace School. Of the estimated 45 students associated with Roosevelt Terrace, approximately 30 would be elementary students (based on yield factors for the approximately 300 apartments at Roosevelt Terrace). The addition of the 30 students to the Federal Terrace School would exceed its capacity.

Mitigation 1. Possible mitigation measures to reduce overcrowding include construction of a new school, adding portable classrooms, and busing students to less crowded schools. Implementing these mitigations would reduce the impact to a nonsignificant level.

Impact 2. A significant and mitigable impact would result from reuse of Mare Island. The additional students generated by reuse of Mare Island would exceed the capacity of Mare Island Elementary School. Of the estimated 726 students from Mare Island housing, approximately 454 would be elementary students (based on yield factors per housing unit in Table 4-8). A total demand

of 728 students would be generated when Mare Island housing students are added to the 274 students now attending the school. This demand would exceed the Mare Island School capacity of 478 students.

Mitigation 2. Possible mitigation measures to reduce overcrowding include construction of a new school, adding portable classrooms, and busing students to less crowded schools. Implementing these mitigations would reduce the impact to a nonsignificant level.

Nonsignificant Impacts

- The estimated 1,500 students generated by projected employees at Mare Island at buildout of the Reuse Plan Alternative are assumed to live in Vallejo. The current VUSD's long-range plan estimates an increase of 2,100 students from 18,900 students in year 1994 to 21,000 students in 2001. However, VUSD conducts enrollment projections annually and the 21,000 students projected for 2001 could change between 1995 and 2001.

  VUSD enrollment projections consider the number of vacant homes and residential units that are likely to be built in Vallejo during this period, as well as historical enrollment trends and birth rate data. Correlation of student increases from new Vallejo families with the VUSD projections will depend on the consistency of their housing characteristics with the factors on which the projections were based. Student increases would, however, occur over a 25-year period, which should allow ample time for the VUSD to plan adequate services for these students. No mitigation is required.

Recreation

Nonsignificant Impacts

- The Reuse Plan Alternative would expand the public recreational opportunities at Mare Island and could create employment for up to 50 people (Vallejo 1994c). This would be a beneficial impact, and no mitigation is required.

4.2.3 Medium Density Alternative

Regional Economy—Employment

Nonsignificant Impacts

- The Medium Density Alternative would develop employment-generating land uses, creating an estimated 5,273 direct jobs in Vallejo and the ROI

by 2020 (compared to 9,669 jobs under Reuse Plan Alternative) (Table 4-3). Approximately 1,686 jobs generated, or 32 percent, would be blue collar. This would be a beneficial impact, and no mitigation is required.

Projected job growth with reuse under this alternative would increase the 2020 employment projections by 19 percent in Vallejo (Table 4-4). The overall increase in job growth in the ROI would be 2.4 percent.

Population and Housing

Nonsignificant Impacts

- By 2020, the Medium Density Alternative would result in an increase in population in Vallejo and the ROI. The population and housing impacts are neither beneficial nor adverse and are the natural consequences of the employment level in the region. No mitigation would be required.

  Under this alternative, 996 housing units would be available (as compared to 1,786 units under the Reuse Plan Alternative) (Table 4-5). The retail/residential district would not be developed under this alternative. The 996 dwelling units would house approximately 3,142 people (as compared to 5,075 people under the Reuse Plan Alternative), assuming existing residents who sell their homes to move Mare Island would be replaced by new residents. Mare Island housing units would represent about 33.5 percent of the new households projected for Vallejo (Table 4-7).

  Increases in population would come primarily from people attracted to the ROI because of jobs created under the Medium Density Alternative. The analysis assumes that approximately 83 percent of future Mare Island employees would live in the ROI, adding approximately 10,929 residents. The increase in 2020 regional population would represent a 3.1 percent increase to the total ROI population (Table 4-6).

Schools (K-12)

The Medium Density Alternative would increase enrollment approximately 1,223 students in grades K-12 over the 25-year period (as compared to 2,271 under the Reuse Plan Alternative) (Table 4-8). Of the 1,223 students, 405 would be children of on-island and Roosevelt Terrace residents, and 818 would be children of Mare Island employees living in Vallejo. Of the 405 students, 360 would live on Mare Island and 45 would live at Roosevelt Terrace.

Impact 1. A significant and mitigable impact would result from the reuse of Roosevelt Terrace. The increase in enrollment of elementary students generated by reuse of Roosevelt Terrace would exceed the capacity of Federal

Terrace School, as described for the Reuse Plan Alternative. Federal Terrace School currently is operating above capacity, and adding 30 students would increase overcrowding in this school.

Mitigation 1. Same as described for the Reuse Plan Alternative.

Impact 2. A significant and mitigable impact would result from reuse of Mare Island. The additional students generated by reuse of Mare Island would exceed the capacity of Mare Island Elementary School. Of the estimated 360 students from Mare Island housing, approximately 210 would be elementary students (based on yield factors per housing unit in Table 4-8). When added to the 274 students now attending the school, total student demand would be 484 students. This would exceed the school capacity of 478 students.

Mitigation 2. Same as described for the Reuse Plan Alternative.

Nonsignificant Impacts

- The 818 students generated by projected employees at Mare Island at buildout of the Medium Density Alternative are assumed to live in Vallejo. The current VUSD's long-range plan estimates an increase of 2,100 students from 18,900 students in 1994 to 21,000 students in 2001. However, VUSD conducts enrollment projections annually, and the 21,000 students projected for 2001 could change between 1995 and 2001.

  VUSD enrollment projections consider the number of vacant homes and residential units that are likely to be built in Vallejo during this period, as well as historical enrollment trends and birth rate data. Correlation of student increases from new Vallejo families with the VUSD projections will depend on the consistency of their housing characteristics with the factors on which the projections were based. Student enrollment, however, would increase over a 25-year period, which should allow ample time for the VUSD to plan adequate services for these students. No mitigation is required.

Recreation

Nonsignificant Impacts

- Reuse resulting from implementing the Medium Density Alternative would expand the recreational opportunities open to the public at Mare Island and could create employment for up to 50 people (Vallejo 1994c). This would be a beneficial impact, and no mitigation is required.

4.2.4 Open Space Alternative

Regional Economy—Employment

Nonsignificant Impacts

- Employment-generating land uses under the Open Space Alternative would create an estimated 4,804 direct jobs in Vallejo and the ROI in 2020 (as compared to 9,669 under the Reuse Plan Alternative) (Table 4-3). Approximately 1,592 jobs generated, or 33 percent, would be blue collar. This would be a beneficial impact, and no mitigation is required.

  Projected job growth with reuse would increase the 2020 employment projections by 17.1 percent in Vallejo (Table 4-4). The overall increase in job growth in the ROI would be 2.2 percent.

Population and Housing

Nonsignificant Impacts

- In 2020, implementing the Open Space Alternative reuse program would result in an increase in population in Vallejo and the ROI. The population and housing impacts are neither beneficial nor adverse and are the natural consequences of the employment level in the region. No mitigation would be required.

  Under the Open Space Alternative, 843 dwelling units would be available (as compared to 1,786 units under the Reuse Plan Alternative) (Table 4-5). The retail/residential area (Reuse Area 10) would not be developed under this alternative. The 843 units would house approximately 2,703 people (as compared 5,075 people under the Reuse Plan Alternative), assuming existing residents who sell their homes to move Mare Island would be replaced by new residents. Mare Island housing units would represent about 28.4 percent of the new households projected for Vallejo (Table 4-7).

  Increases in population would come primarily from people attracted to the ROI because of jobs created under the Open Space Alternative. The analysis assumes that approximately 83 percent of future Mare Island employees would live in the ROI, adding approximately 9,819 residents. The increase in 2020 regional population would represent a 2.8 percent increase to the total ROI population (Table 4-6).

Schools (K-12)

The Open Space Alternative reuse would increase enrollment by approximately 1,113 students in grades K-12 over the 25-year period (as compared to 2,271 under the Reuse Plan Alternative) (Table 4-8). Of the 1,113 students, 368 students would be the children of residents of Mare Island and Roosevelt Terrace, and 745 would be the children of Mare Island employees living in Vallejo. Of the 368 students, 323 would live on Mare Island and 45 would live at Roosevelt Terrace.

Impact 1. A significant and mitigable impact would result from reuse of Roosevelt Terrace. The increased enrollment of elementary students generated by reuse of Roosevelt Terrace would exceed the capacity of the Federal Terrace School, as described for the Reuse Plan Alternative. The Federal Terrace School currently is operating above capacity, and adding 30 students would increase overcrowding in this school.

Mitigation 1. Same as described under Reuse Plan Alternative.

Nonsignificant Impacts

- Of the estimated 323 students from Mare Island housing, approximately 206 would be elementary students (based on yield factors per housing unit in Table 4-8). When added to the 274 students currently attending the school, total student demand at Mare Island Elementary would be 474 students. This would not exceed the capacity of the school and would therefore not be a significant impact. No mitigation is required.

- The 745 students generated by the projected employees at Mare Island at buildout of the Open Space Alternative are assumed to live in Vallejo. The current VUSD's long-range plan estimates an increase of 2,100 students from 18,900 students in 1994 to 21,000 students in 2001. However, VUSD conducts enrollment projections annually and the 21,000 students projected for 2001, could change between 1995 and 2001.

  VUSD enrollment projections consider the number of vacant homes and residential units that are likely to be built in Vallejo during this period, as well as historical enrollment trends and birth rate data. Correlation of student increases from new Vallejo families with the VUSD projections will depend on the consistency of their housing characteristics with the factors on which the projections were based. Student enrollment, however, would increase over a 25-year period, which should allow sufficient time for the VUSD to plan adequate services for these students. No mitigation is required.

Recreation

Nonsignificant Impacts

- Reuse resulting from implementing the Open Space Alternative would expand the recreational opportunities open to the public at Mare Island and could create employment for up to 50 people (Vallejo 1994c). This would be a beneficial impact, and no mitigation is required.

4.2.5 No Action Alternative

Regional Economy - Employment and Income

Employment under the No Action Alternative would not be an impact. There would be approximately 80 city, contractor and/or Navy caretaker jobs required to maintain the island, which would provide minimal employment and would not be considered an adverse or beneficial impact.

Population and Housing

There would be no impact to population and housing under this alternative. No additional housing would be built on-site and there would be no resident population on site. There could be a few more households in Vallejo as a result of the caretaker employment on-site.

Schools (K-12)

There would be no impacts to schools under this alternative. The No Action Alternative would generate few additional school children. There would be no additions to school capacity, and schools in the area of the shipyard would be expected to operate within capacity.

Recreation

There would be no impacts to recreation under this alternative. Implementing the No Action Alternative would not add or remove park facilities to Vallejo or the region.

4.3 PUBLIC SERVICES

This section analyzes impacts to public services that could occur through the disposal and reuse of Federal surplus land at Mare Island. Impacts under the No Action Alternative also are evaluated. Public services include police, fire, medical, and emergency medical services.

Region of Influence

The ROI for this section is Vallejo and Mare Island. Vallejo was selected because it will assume municipal jurisdiction over the property following disposal by the Navy.

Significance Criteria

A project may have a significant impact on the environment if it resulted in the need for new or substantially increased police, fire, medical, or emergency medical services. A summary of impacts and their significance is provided in Table 4-9 below.

TABLE 4-9
SUMMARY OF PUBLIC SERVICES IMPACTS AND SIGNIFICANCE

IMPACT ISSUES	NAVY ACTIONS		COMMUNITY REUSE ALTERNATIVES		
	Disposal	No Action Alternative	Reuse Plan	Medium Density	Open Space
Increased demand for Vallejo law enforcement services	○	◐	◑	◑	◑
Increased demand for Vallejo Fire Department fire protection services	○	◐	◑	◑	◑
Increased demand for medical services in ROI	○	◐	◐	◐	◐
Increased demand for emergency medical services	○	◐	◑	◑	◑

LEGEND:

Level of Impact
● = Significant and not mitigable
◑ = Significant and mitigable
◐ = Nonsignificant
○ = No impact

Planning Issues and Process

Prior to closure of the Mare Island Naval Shipyard, the shipyard was under exclusive jurisdiction of the Navy and public services were provided to the base mainly by the Mare Island police force and fire department. Since closure of the base, the shipyard is under concurrent jurisdiction of the Navy and

Vallejo; consequently, law enforcement is accomplished jointly by the Navy and Vallejo. Fire and emergency medical services are provided by the Navy except to leased sites, which are being served by the Vallejo fire department. Following conveyance, Vallejo will be responsible for providing public services on Federal surplus land conveyed to Vallejo. It is anticipated that Vallejo also will provide public services to Federal surplus land conveyed to other non-Federal entities. As mentioned in Section 3.3, the updated Vallejo General Plan contains a policy encouraging revenue-generating land uses on Mare Island to help pay for any increased public services to serve the area.

4.3.1 Disposal

There would be no direct impacts to public services under the disposal action. All Navy agreements and contracts with the city or other service provider would be discontinued. City agencies would be solely responsible for providing public services.

4.3.2 Reuse Plan Alternative

Law Enforcement

Impact 1. A significant and mitigable impact would be the substantial increase in demand for Vallejo police services generated by the increased population on Mare Island. The Vallejo Police Department (VPD) would provide police services on Mare Island.

The VPD has estimated that at final buildout of the Reuse Plan Alternative 10 new officers (2 new beats) would be required, at a yearly cost of $1.13 million to provide police services on Mare Island. This cost includes vehicle purchases and maintenance, support staff, and overhead costs. The reuse plan indicated that the VPD would renovate and use the Mare Island main police station (Building 729) (Vallejo 1994c; Hauser 1994).

Mitigation 1. Adopt mechanisms to fund increased police staffing. The mechanisms could include the general plan policy for encouraging revenue-generating uses to help pay for the cost of new services. Implementing this mitigation would reduce the impact to a nonsignificant level.

Fire Protection

Impact 2. A significant and mitigable impact would be the substantial increase in the demand for Vallejo Fire Department (VFD) services at Mare Island. The VFD has estimated that providing fire protection service to Mare Island at full buildout of the Reuse Plan Alternative would require 1 fire station on Mare Island. Staffing requirements for this station would include 21

firefighters for a 3-person engine company and one 4-person truck company (Vallejo 1994c). The reuse plan indicates that the VFD would use the main fire station on the island.

Mitigation 2. Adopt mechanisms to fund the projected staffing requirements. The mechanisms could include the general plan policy for encouraging revenue-generating uses to help pay for the new services. Implementing this mitigation would reduce the impact to a nonsignificant level.

Medical Services

Nonsignificant Impacts

- Under the Reuse Plan Alternative, increased demand for medical services would be generated. This impact would not be significant because the increased demand could be met by existing and projected capacity at Kaiser and Sutter-Solano medical centers (Graham 1994). No mitigation is required.

Emergency Medical Services

Impact 3. A significant and mitigable impact would be the substantial increase in the demand for emergency medical services at Mare Island. Emergency services are provided by the VFD and private ambulance companies.

Mitigation 3. Update the emergency medical service agreements with ambulance companies to ensure that the staffing and equipment levels are adequate. Integrate the fire station on Mare Island with the VFD's emergency medical response system. Adopt mechanisms to fund the projected staffing requirements, including the general plan policy for encouraging revenue-generating uses to help pay for the new services. Implementing these mitigations would reduce the impact to a nonsignificant level.

4.3.3 Medium Density Alternative

Law Enforcement

Impact 1. A significant and mitigable impact would be the increased demand for Vallejo police services, although demand would be less than under the Reuse Alternative because of the reduced population under this alternative.

Mitigation 1. Same as for the Reuse Plan Alternative.

Fire Protection

Impact 2. A significant and mitigable impact would be the increased demand for Vallejo fire protection services, although demand would be less than under the Reuse Alternative because of the reduced population under this alternative.

Mitigation 2. Same as for the Reuse Plan Alternative.

Medical Services

Nonsignificant Impacts

- Demand for medical services would be somewhat less than that described under the Reuse Plan Alternative and would be met by existing medical facilities. This would not be a significant impact. No mitigation is required.

Emergency Medical Services

Impact 3. A significant and mitigable impact would be the increased demand for Vallejo emergency medical services at Mare Island, although demand would be less than under the Reuse Plan Alternative.

Mitigation 3. Same as for the Reuse Plan Alternative.

4.3.4 Open Space Alternative

Law Enforcement

Impact 1. A significant and mitigable impact would be the increased demand for Vallejo police services at Mare Island, although demand would be less than under the other reuse alternatives.

Mitigation 1. Same as for the Reuse Plan Alternative.

Fire Protection

Impact 2. A significant and mitigable impact would be the increased demand for Vallejo fire protection services at Mare Island, although demand would be less than that under the other reuse alternatives.

Mitigation 2. Same as for the Reuse Plan Alternative.

Medical Services

Nonsignificant Impacts

- Demand for medical services would be less than that under the other reuse alternatives and would be met by existing medical facilities. This would not be a significant impact. No mitigation is required.

Emergency Medical Services

Impact 3. A significant and mitigable impact would be the increased demand for Vallejo emergency medical services at Mare Island, although demand would be less than that under the other reuse alternatives.

Mitigation 3. Same as for the Reuse Plan Alternative.

4.3.5 No Action Alternative

Under the No Action Alternative, the Navy would continue to be responsible for providing adequate levels of public services. The Navy would enter into an agreement with Vallejo or with another outside agency to partially or fully provide these services.

Law Enforcement

Nonsignificant Impacts

- Minimal demand for police services would be generated by caretaker activities. Service would be provided through an agreement or contract with Vallejo or with another outside source. This impact would not be significant. No mitigation is required.

Fire Protection

Nonsignificant Impacts

- Minimal demand for fire services would be generated by caretaker activities. Fire protection would be provided through an agreement or contract with Vallejo or with another outside source. This impact would not be significant. No mitigation is required.

Medical Services

Nonsignificant Impacts

- Minimal demand for medical services would be generated under this alternative. Because of the low number of Navy personnel on the island, this impact would not be significant. Demand could be met by existing facilities in the area. No mitigation is required.

Emergency Medical Services

Nonsignificant Impacts

- Minimal demand for emergency medical services would be generated by this alternative. Emergency medical services would be provided through an agreement or contract with Vallejo or with another outside source. This impact would not be significant. No mitigation is required.

4.4 CULTURAL RESOURCES

For purposes of this analysis, significant cultural resources are those properties listed in or eligible for inclusion in the National Register of Historic Places (NRHP). The California Register of Historical Resources also recognizes those properties as being significant. The NRHP is a list of properties that possess historic integrity and meet criteria established by the Secretary of the Interior and that are deemed worthy of preservation. As explained in Section 3.4, the Mare Island Historic District has been listed in the NRHP.

Historic properties at Mare Island are restricted to contributing buildings, structures, landscapes, and archeological sites located within the Mare Island Historic District, the boundaries of which are shown in Figure 3-9. Any adverse effects on cultural resources from disposal and reuse are restricted to effects on these buildings, structures, landscapes, and archeological sites. The following discussion identifies the potential adverse impacts of disposal and reuse on the historic properties incorporating the mitigative actions identified in the Memorandum of Agreement (MOA). The Navy action to dispose of Federal surplus lands at the former Mare Island Naval Shipyard is subject to Federal preservation law and regulations and reuse of the site is subject to state laws.

Region of Influence

The ROI for cultural resources is the area defined by the boundaries of the former Mare Island Naval Shipyard. It also includes the off-island areas of Roosevelt Terrace, the Main Entrance, and the rail line corridor. Because the proposed action is the disposal and reuse of Mare Island Naval Shipyard, the area of potential impacts is limited to the area within the boundaries of these properties, which is also the ROI.

Significance Criteria

This analysis uses the Criteria of Adverse Effect, as developed by the Advisory Council on Historic Preservation (ACHP) in its regulations for the "Protection of Historic Properties" (36 C.F.R. Part 800) in identifying adverse effects. These regulations define an adverse effect as any action that would diminish the integrity of a historic property's location, setting, design, materials, workmanship, feeling, or association. The regulations cite the following examples of effects that would be adverse.

- Destruction of or damage or alteration to all or part of the property;
- Isolation of the property or alteration of the character of the property's setting when that character contributes to the property's qualifications for the NRHP;

- Introduction of visual, audible, or atmospheric elements that are out of character with the property or changes that may alter its setting;
- Neglect of a property resulting in its deterioration or destruction; and
- Transfer, lease, or sale of a property, without adequate provisions to protect the property's historic integrity.

To ensure appropriate treatment of the cultural resources, a MOA was executed in 1997 by the Navy, SHPO, ACHP, the National Park Service (NPS), and Vallejo through the Section 106 consultation process. Implementation of this MOA will mitigate the adverse effects to cultural resources associated with property transfer. For purposes of NEPA, implementation of the MOA reduces the significant impacts to cultural resources to a nonsignificant level. Table 4-10 summarizes impacts of disposal and reuse actions on cultural resources incorporating mitigations from the MOA as a part of each action.

TABLE 4-10
SUMMARY OF CULTURAL RESOURCES IMPACTS AND SIGNIFICANCE

IMPACT ISSUES	NAVY ACTIONS		COMMUNITY REUSE ALTERNATIVES		
	Disposal	No Action Alternative	Reuse Plan Alternative	Medium Density	Open Space
Transfer or lease of historic properties to non-Federal entities	◐	◐	○	○	○
Deterioration of buildings through layaway	○	◐	◐	◐	◐
Impacts of adaptive reuse and alteration on historic resources	○	○	◐	◐	◐
Impacts of demolition activities on historic buildings, structures, and landscapes	○	○	◐	◐	◐
Construction of new buildings in the Mare Island Historic District	○	○	◐	◐	◐
Construction and reuse impacts to historic archeological sites	○	○	◐	◐	◐

LEGEND:

Level of Impact

● = Significant and not mitigable
◑ = Significant and mitigable
◐ = Nonsignificant
○ = No impact

Memorandum of Agreement

As required by Section 106 of the National Historic Preservation Act (NHPA), 16 U.S.C. §470f, and its implementing regulations, 36 C.F.R. Part 800, the Navy consulted with the SHPO, the ACHP, and Vallejo to identify ways to avoid or mitigate any adverse effects to historic properties, resulting in the execution of a MOA. Implementation of the MOA concludes the Section 106 review for the disposal action, and provides "evidence that the Navy has afforded the Council an opportunity to comment on the Navy's undertaking and its effects on historic properties." The disposal and reuse actions will be implemented according to the terms of the MOA. A MOA is signed by the agency official (the Navy in this case), the SHPO, the ACHP, and in some cases, other parties are asked to sign as participating or concurring parties. In this case Vallejo and NPS have concurred with the MOA.

Among other things, the agreement covers the Navy's layaway program, interim leases of historic buildings while the Navy retains ownership, and review of undertakings affecting selected buildings after the Navy disposal. The MOA identifies contributing properties within Reuse Area 4, selected contributing buildings outside Reuse Area 4, and contributing properties on land being transferred to other Federal agencies and state reversionary land. The list of properties that are included as contributing to the National Register Historic District is included as Appendix C to the MOA. Vallejo has agreed to add a selected number of buildings and structures to the coverage of its historic preservation ordinance. The MOA is included as Appendix D to this document. Correspondence relating to the Section 106 Consultation and the resulting MOA are provided in Appendix C of the FEIS/EIR. Highlights of the MOA are as follows.

- *Archeological artifacts.* The Navy agrees to curate artifacts and associated field notes from archeological excavations undertaken in 1984.

- *Historic records and artifacts.* The Navy agrees to transfer important records to the National Archives and important historic artifacts to the Naval Historical Center in Washington, DC. It is anticipated that most of these historic artifacts would remain in Vallejo, on loan from the Naval Historical Center to the city, the Mare Island Historic Park Foundation, or some other similar institution.

- *Layaway and caretaker maintenance.* The Navy agrees to layaway (that is, vacate and secure) historic buildings in a manner that causes least harm to the historic properties. A set of layaway and caretaker standards is included as Appendix B to the MOA. Any historic building that has not been placed in caretaker status will be maintained in a manner that causes least harm to it; a set of standards for routine maintenance of historic properties is included as Appendix A to the MOA.

- *Recordation.* The Navy agrees to consult with the NPS to develop a program for recording "the most representative historic buildings" within the historic district to the standards of the Historic American Engineering Record (HAER) or Historic American Buildings Survey (HABS) for permanent retention in the Library of Congress. Recordation would occur prior to disposal.

- *Predisposal leasing.* The Navy agrees to enforce routine maintenance standards (included as Appendix A in the MOA) in any lease of a historic property, executed before the property has been transferred from Federal ownership. The Navy agrees to inspect leased historic properties semiannually to ensure that the terms of the lease are being followed.

- *City of Vallejo historic preservation.* Vallejo agrees to add a selected number of buildings and structures to the jurisdiction of its historic preservation ordinance. Under this arrangement, any action affecting the designated buildings after the Navy has transferred title would be subject to the requirements of this City of Vallejo ordinance. Currently this ordinance requires modifications to historic buildings be made in conformance with Secretary of Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings. The buildings and areas covered by the ordinance include all the resources within Reuse Area 4, selected resources outside Reuse Area 4, and resources being transferred to Federal agencies, reverted to the State of California, and reserved for a public benefit conveyance; when these resources are transferred out of public ownership.

- *Historic Archeology.* The provisions of the 1992 Programmatic Agreement shall be extended to include all contributing historic buildings and structures identified in the revised National Register Nomination Form, dated January 1996, as well as the historic archeology that may exist in the 28 archeological sensitive areas identified in the revised National Register Form. Excavations, installation of utilities, and tree planting or removal would be restricted or closely monitored in areas containing archeological sites.

4.4.1 Disposal

Nonsignificant Impacts

- *Transfer, lease or sale of the property.* Disposal could result in an adverse effect to historic properties under "transfer, lease, or sale of the property without adequate provisions to protect the property's historic integrity." This potential adverse effect is addressed by the Navy in the MOA and therefore is nonsignificant. MOA measures include curation of artifacts,

transfer of important records and historic artifacts to the Naval Historical Center in Washington D.C., implementation of appropriate layaway standards, recordation of the most representative historic buildings, and enforcement of maintenance standards during predisposal leasing.

4.4.2 Reuse Plan Alternative

Nonsignificant Impacts

- *Deterioration of Historic Property.* Because reuse would occur over a projected twenty year period, it is anticipated that some buildings may remain in layaway status for some time, which could result in an adverse effect through "neglect of a property resulting in its deterioration or destruction." Following disposal by the Navy, buildings would continue to deteriorate and some of the buildings that had been laid away might be demolished.

  This potential adverse effect is addressed by the Navy and Vallejo in the MOA and therefore is nonsignificant. The MOA calls for the Navy to monitor the condition of the "mothballed" historic buildings and assure appropriate maintenance of those leased or still in use; and the city to administer a selected number of buildings, structures and landscaped areas in accordance with its historic preservation ordinance as title is transferred. The buildings and areas included under this ordinance include all resources in Reuse Area 4, and selected resources outside Reuse Area 4. Those historic buildings being transferred to Federal agencies, reverted to the State of California, or reserved for a public benefit conveyance for park or historic monument purposes are protected by Federal or state law respectively.

  In addition, the MOA specifies that the Navy and NPS will consult to develop a program for recording a representative sample of buildings, structures, and landscapes within the historic district to the standards of HABS/HAER, to ensure a permanent record of these properties.

- *Reuse or Rehabilitation of Historic Structures.* It is likely that a large percentage of the historic buildings, structures, and landscapes within the historic district would be reused and rehabilitated. The rehabilitation could cause an adverse effect through the "physical destruction, damage, or alteration of all or part of a property." This potential adverse effect is addressed by Vallejo in the MOA, and therefore is nonsignificant. Pursuant to the MOA Vallejo will add a selected number of buildings, structures and landscaped areas to the jurisdiction of its historic preservation ordinance as title is transferred. Any action affecting the designated buildings would be subject to requirements of this ordinance.

- *Demolition of Historic Properties.* It is likely that some of the historic buildings, structures, and landscapes within the historic district would be altered or demolished to accommodate reuse proposals. This could cause an adverse effect through the "physical destruction, damage, or alteration of all or part of a property."

  This potential adverse effect is addressed by the MOA, and therefore is nonsignificant. Pursuant to the MOA, Vallejo will add a selected number of buildings, structures and landscaped areas to the jurisdiction of its historic preservation ordinance as title is transferred. Currently this ordinance requires any alteration to historic buildings to be consistent with the Secretary of Interior's Standards for Rehabilitation. The buildings and areas included under this ordinance include all resources in Reuse Area 4, and selected resources outside Reuse Area 4. Resources being transferred to Federal agencies, reverted to the State of California, and reserved for a public benefit conveyance for park or historic monument purposes are protected under Federal or state law respectively.

  In addition, the MOA specifies that the Navy and NPS will consult to develop a program for recording a representative sample of buildings, structures, and landscapes within the historic district to the standards of HABS/HAER, to ensure a permanent record of these properties.

- *Construction of Buildings within the Historic District.* The Reuse Plan Alternative would likely result in construction of some buildings within the historic district. This construction could result in an adverse effect through "the introduction of visual, audible, or atmospheric elements that are out of character with the property or alter its setting." Construction could affect individual buildings in the construction area and the general character of the historic district.

  This potential adverse effect is addressed by the MOA, and therefore is nonsignificant. Pursuant to the MOA, Vallejo will add a selected number of buildings, structures and landscaped areas to the jurisdiction of its historic preservation ordinance as title is transferred. Currently this ordinance requires any alterations to historic buildings to be consistent with the Secretary of Interior's Standards for Rehabilitation. The buildings and areas included under this ordinance include all the resources within Reuse Area 4, and selected resources outside Reuse Area 4. Resources being transferred to Federal agencies, reverted to the State of California, and reserved for a public benefit conveyance for park or historic monument purposes are protected under Federal or state law respectively.

- *Effects of Reuse on Historic Archaeological Sites.* Reuse of the area, including construction, could cause adverse impacts to significant archeological materials in the 28 identified historic archeologically sensitive areas. Any damage to these archeological properties could constitute an adverse effect through the "physical destruction, damage, or alteration of all or part of a property." This potential adverse effect is addressed by the MOA and therefore is nonsignificant. Pursuant to the MOA, Vallejo will "comply with the requirements of the California Environmental Quality Act (CEQA) regarding the protection of historic and prehistoric archeological resources." CEQA protections include standards for data recovery and other treatments of archeological resources.

4.4.3 Medium Density Alternative

The Medium Density Alternative would involve less construction and fewer direct impacts to historic properties than the Reuse Plan Alternative.

Nonsignificant Impacts

- *Deterioration of Historic Properties.* It is anticipated that some buildings may remain in layaway status for some time. This action could result in adverse effects under "neglect of a property resulting in its deterioration or destruction." This potential adverse effect is addressed by the MOA and therefore is nonsignificant. Pursuant to the MOA the Navy is taking actions to record the historic district to ensure a permanent record and Vallejo will add a selected number of buildings, structures and landscaped areas to the jurisdiction of its historic preservation ordinance as title is transferred to ensure their preservation is addressed in the city's plans and those of potential developers.

- *Reuse or Rehabilitation of Historic Structures.* It is likely that a large percentage of the historic buildings, structures, and landscapes within the historic district would be reused and rehabilitated. The rehabilitation could cause an adverse effect through the "physical destruction, damage, or alteration of all or part of a property." This potential adverse effect is addressed by the MOA and therefore is nonsignificant. Pursuant to the MOA the Navy is taking actions to make a permanent record of the historic district and Vallejo will add a selected number of buildings, structures and landscaped areas to the jurisdiction of its historic preservation ordinance as title is transferred. Currently, this ordinance requires that alterations to historic structures be consistent with the Secretary of Interior's Standards for Rehabilitation.

- *Demolition of Historic Properties.* It is likely that some of the historic buildings, structures, and landscapes within the historic district would be demolished to accommodate reuse proposals. This demolition could cause an adverse effect through the "physical destruction, damage, or alteration of all or part of a property." This potential adverse effect is addressed by the MOA, and therefore is nonsignificant. Pursuant to the MOA the Navy is taking steps to make a permanent record of the historic district and Vallejo will add a selected number of buildings, structures and landscaped areas to the jurisdiction of its historic preservation ordinance as title is transferred to ensure that preservation is considered in city plans and those of developers.

- *Construction of Buildings Within the Historic District.* The Medium Density Alternative would likely result in construction of some new buildings within the historic district, although to a lesser degree than with the Reuse Plan Alternative. This construction could result in an adverse effect through "the introduction of visual, audible, or atmospheric elements that are out of character with the property or alter its setting." This potential adverse effect is addressed by the MOA and is therefore nonsignificant. Pursuant to the MOA the Navy is taking steps to make a permanent record of the historic district and Vallejo will add a selected number of buildings, structures and landscaped areas to the jurisdiction of its historic preservation ordinance as title is transferred. Currently, this ordinance requires any alterations to historic structures to be consistent with the Secretary of Interior's Standards for Rehabilitation.

- *Effects of Reuse on Historic Archeological Sites.* Reuse of the area, including construction, would have the potential to cause adverse impacts to significant archeological materials within the 28 historic archeologically sensitive areas. Any damage to these archeological properties could constitute an adverse effect through the "physical destruction, damage, or alteration of all or part of a property." The potential adverse effect is addressed by the MOA and therefore is nonsignificant. Pursuant to the MOA Vallejo will "comply with the requirements of CEQA regarding the protection of historic and prehistoric archeological resources."

4.4.4 Open Space Alternative

The Open Space Alternative would involve less construction and therefore fewer direct impacts to historic properties than either the Reuse Plan Alternative or the Medium Density Alternative.

Nonsignificant Impacts

- *Deterioration of Historic Properties.* It is anticipated that some buildings may remain in layaway status for some time. This action could result in an adverse effect under "neglect of a property resulting in its deterioration or destruction." This potential adverse effect is addressed by the MOA and therefore is nonsignificant. Pursuant to the MOA the Navy is taking steps to record the historic district to ensure a permanent record and Vallejo will add a selected number of buildings, structures and landscaped areas to the jurisdiction of its historic preservation ordinance as title is transferred to ensure their preservation is addressed in the city's plans and those of potential developers.

- *Reuse or Rehabilitation of Historic Structures.* It is likely that a large percentage of the historic buildings, structures, and landscapes within the historic district would be reused and rehabilitated. The rehabilitation could cause an adverse effect through the "physical destruction, damage, or alteration of all or part of a property." This potential adverse effect is addressed by the MOA and therefore is nonsignificant. Pursuant to the MOA the Navy is taking actions to make a permanent record of the historic district and Vallejo will add a selected number of buildings, structures and landscaped areas to the jurisdiction of its historic preservation ordinance as title is transferred. Currently, this ordinance requires that alterations to historic structures be consistent with the Secretary of Interior's Standards for Rehabilitation.

- *Demolition of Historic Properties.* It is likely that some of the historic buildings, structures, and landscapes within the historic district would be demolished to accommodate reuse proposals. This demolition could cause an adverse effect through the "physical destruction, damage, or alteration of all or part of a property." This potential adverse effect is addressed by the MOA, and therefore is nonsignificant. Pursuant to the MOA the Navy is taking steps to make a permanent record of the historic district and Vallejo will add a selected number of buildings, structures and landscaped areas to the jurisdiction of its historic preservation ordinance as title is transferred to ensure that preservation is considered in city plans and those of developers.

- *Construction of Buildings Within the Historic District.* The Open Space Alternative would likely result in construction of some new buildings within the historic district, although to a lesser degree than with the Reuse Plan Alternative. This construction could result in an adverse effect through "the introduction of visual, audible, or atmospheric elements that are out of character with the property or alter its setting." This potential adverse effect is addressed by the MOA and therefore is

nonsignificant. Pursuant to the MOA the Navy is taking actions to make a permanent record of the historic district and Vallejo will add a selected number of buildings, structures and landscaped areas to the jurisdiction of its historic preservation ordinance as title is transferred.

- *Effects of Reuse on Historic Archeological Sites.* Reuse of the area, including construction, would have the potential to cause adverse effects to significant archeological materials within the 28 historic archeologically sensitive areas. Any damage to these archeological properties could constitute an adverse effect through the "physical destruction, damage, or alteration of all or part of a property." The potential adverse effect is addressed by the MOA and therefore is nonsignificant. Pursuant to the MOA Vallejo will "comply with the requirements of CEQA regarding the protection of historic and prehistoric archeological resources."

4.4.5 No Action Alternative

This alternative would place the facility in caretaker status under continued Federal ownership. On-site activities would be limited to security, maintenance, and remediation activities and limited interim leasing.

As long as the property remains under Navy control and jurisdiction, each action that affects a National Register resource will be reviewed under the requirements of Sections 106, 16 U.S.C. §470f, and 110f, 16 U.S.C. §470h-2, of the NHPA. Such reviews will conform to implementing regulations, 36 C.F.R. Part 800, that require consideration of alternatives to adverse actions, in consultation with the SHPO, ACHP and other interested parties. While such review would not ensure preservation of the affected National Register resources, it would ensure that preservation alternatives are considered. If a building or structure identified as contributing to the National Register historic district were to be demolished or substantially altered, it would be recorded to the standards of HABS or HAER as appropriate for filing with the Library of Congress by the National Park Service.

Nonsignificant Impacts

- *Deterioration of Historic Property.* In the short term, the Navy will layaway historic buildings. This program could result in an adverse effect under "neglect of a property resulting in its deterioration or destruction." This potential adverse effect is addressed in the MOA and therefore is nonsignificant. The Navy will follow layaway and caretaker procedures, as specified in Appendix B of the MOA, that are designed to protect historic properties.

- *Lease and Sub-let of Properties.* The Navy may lease historic buildings to Vallejo, which may sublet these properties to non-Navy parties. This

program could result in an adverse effect under "transfer, lease, or sale of the property without adequate provisions to protect the property's historic integrity." This potential adverse effect is addressed in the MOA and therefore is nonsignificant. The Navy will enforce standards on lessees; these standards are specified in Appendix A of the MOA. These standards are intended to avoid adverse effects and to maintain the integrity of the historic properties. The agreement further stipulates that standard compliance with Section 106 of NHPA will be followed if the standards cannot be met.

4.5 AESTHETICS AND SCENIC RESOURCES

The following section describes impacts to aesthetics and visual resources that could occur under the disposal and reuse actions. This section focuses on impacts that are compared to existing visual resources.

Region of Influence

The ROI for visual resources includes areas of the Mare Island viewshed within 5 miles of the island.

Significance Criteria

For this analysis, impacts to visual resources were qualitatively evaluated by assessing the degree of visual contrast that proposed modifications under each of the alternatives would create with the existing landscape character, as seen from viewpoints within the ROI. An impact was considered significant if it substantially reduced the scenic quality of a scenic resource area as seen from any viewpoint with a high level of sensitivity. Impacts are identified by the scenic resource areas identified in Section 3.5 and are shown on Figure 3-10. A summary of impacts and their significance is provided in Table 4-11.

TABLE 4-11
SUMMARY OF AESTHETICS AND SCENIC RESOURCES IMPACTS AND SIGNIFICANCE

IMPACT ISSUES	NAVY ACTIONS		COMMUNITY REUSE ALTERNATIVES		
	Disposal	No Action Alternative	Reuse Plan	Medium Density	Open Space
Southern crossing bridge visual effects	○	○	●	○	○
Visibility of trails in regional open space	○	○	◑	◑	◑
Visibility of relocated equestrian facility in the regional park	○	○	◑	◑	◑
Visibility of relocated rifle range in regional park	○	○	◑	○	○
Visual effects of infill, redevelopment, and expansion activities	○	○	◍	◍	◍
Golf course expansion	○	○	◍	◍	○
Reuse of Building 513 (Main Entrance)	○	○	◍	◍	◍
Reduction of Roosevelt Terrace units and added landscaping	○	○	◍	◍	◍
Building deterioration and landscape alteration under caretaker status	○	◍	○	○	○

LEGEND:

Level of Impact

● - Significant and not mitigable
◑ - Significant and mitigable
◍ - Nonsignificant
○ - No impact

4.5.1 Disposal

No direct impacts to visual resources would occur because the disposal action would not entail any changes to the physical environment.

4.5.2 Reuse Plan Alternative

Under the Reuse Plan Alternative, redevelopment, infill, and expansion of the development would occur. The southern crossing bridge would be constructed between the southern portion of the island and Vallejo. Walking, bicycling, and equestrian trails could be developed in the open space areas. The rifle range and equestrian center would be relocated to the proposed regional park.

Impact 1. A significant and not mitigable visual impact would be created by construction of the southern crossing bridge across Mare Island Strait. The proposed southern crossing bridge across Mare Island Strait would be prominently visible from viewpoints with high viewer sensitivity to the east, south, and southwest of Mare Island. It would especially impact views from South Vallejo, Old City, St. Vincent Hill, Mare Island, Carquinez Straits, and from within the proposed retail/residential area (Reuse Area 10).

Construction of the west abutment of the bridge could result in ground disturbance, especially if it required cutting into the hillside. This would increase the degree and extent of adverse visual impacts associated with the bridge within the retail/residential area, Carquinez Heights, and possibly Mare Island Strait.

Mitigation 1. Implement the following measures to reduce impacts to aesthetics/scenic resources. Impacts after implementing these measures, while reduced, would still be significant:

- Design the crossing and bridge to avoid disturbing the existing landscape to the greatest extent practical.
- Design the bridge using materials to minimize its visual contrast with the surrounding landscape.
- Design lighting to keep glare to a minimum.

Impact 2. A significant and mitigable visual impact would result from constructing new trails on the upland open space areas. Walking, cycling, and equestrian trails proposed under the Reuse Plan Alternative for the upland open space scenic resource area could result in visible scarring. The area is visible from many viewpoints with high viewer sensitivity, including

Waterfront Memorial Park, the ferry and ferry terminal, waterfront walk (along the east side of Mare Island Strait), Mare Island Way, Mare Island Strait, South Vallejo, Seaview, Sandy Beach, Carquinez Strait, San Pablo Avenue, San Pablo Bay, and the regional parks along the south shoreline of Carquinez Strait and San Pablo Bay.

Mitigation 2. Use existing roads for trails to the extent possible. Do not locate trails on steep slopes that would require extensive cut and fill. Design the trails to blend with the existing natural features, thereby minimizing disturbance to the existing landscape. Implementing these measures would reduce impacts to a nonsignificant level.

Impact 3. A significant and mitigable visual impact would result from locating the equestrian facility in the upland open space area. Relocating the existing equestrian facility from the dredge disposal area to the upland open space scenic resource area would render this facility visible from viewpoints with high viewer sensitivity. The exact location and extent of the proposed new facility are not known; however, relocating the equestrian facilities to this area could result in construction of new structures and trails in an undeveloped area. Designing new structures without attention to visual quality could reduce the scenic quality of the affected area.

Mitigation 3a. Do not locate the equestrian facility to the upland open space area. Implementing this mitigation would reduce impacts to a nonsignificant level.

Mitigation 3b. Do not locate the equestrian facilities on sideslopes, hilltops, or ridgelines. The facilities ideally would be at the base of the hills and would be designed to create minimum disturbance to the existing landscape through the use of landscape buffers, construction materials, and colors that blend with the natural surroundings. Implementing these measures would reduce impacts to a nonsignificant level.

Impact 4. A significant and mitigable visual impact could result from relocating the existing rifle range to the upland open space scenic resource area. Developing this new facility likely would result in extensive ground disturbance from the construction of new facilities, which would be significant if visible from viewpoints with high viewer sensitivity.

Mitigation 4a. Remove the rifle range from Mare Island. Implementing this mitigation measure would reduce the impact to a nonsignificant level.

Mitigation 4b. Do not locate the rifle range on sideslopes, hilltops, or ridgelines. Instead, locate the rifle range at the base of the hills, employing a

design that creates minimum disturbance to the existing landscape. Select construction materials and colors to blend with the natural surroundings. Implementing this mitigation would reduce impacts.

Nonsignificant Impacts

- Infill, redevelopment, and slight expansion in the urban, housing, and campus scenic resource areas under this reuse alternative would not result in significant aesthetic/scenic impacts in these areas. This alternative does not propose any reuse development that would significantly alter the visual character of the historic housing or lowland open space scenic resource areas. No mitigation is required.

- Expanding the golf course located on Federal surplus land would not substantially change the existing open space visual character of the affected areas in and adjacent to the golf course scenic resource area. This impact would not be significant, and no mitigation is required.

- Reuse of Building 513 at the Main Entrance would not substantially change the existing character of the area and would therefore not be a significant visual impact. The causeway entrance would be re-landscaped, which would improve the aesthetics of the area. No mitigation is required.

- Reducing the number of units and providing landscaping in Roosevelt Terrace would be a beneficial impact of reuse. No mitigation is required.

4.5.3 Medium Density Alternative

Under this alternative, redevelopment would be less than under the Reuse Plan Alternative. Construction of the southern crossing and development of Reuse Area 10 would not occur under this alternative. The rifle range would remain in its current location, but the equestrian facility would be relocated to the proposed regional park.

Impact 1. A significant and mitigable impact would result from constructing new trails in areas visible from viewpoints of high sensitivity, as described for the Reuse Plan Alternative. Walking, cycling, and equestrian trails proposed as part of reuse in the regional park area would be located in upland areas visible from several viewpoints.

Mitigation 1. Same as for the Reuse Plan Alternative.

Impact 2. A significant and mitigable visual impact would result from relocating the equestrian facility to the regional park area, visible from

viewpoints with high viewer sensitivity, as described for the Reuse Plan Alternative.

Mitigation 2. Same as for the Reuse Plan Alternative.

Nonsignificant Impacts

- As under the Reuse Plan Alternative, infill and redevelopment activities under this alternative would not significantly impact the visual character of the area or significantly alter the visual character of the historic housing. Redevelopment would be less under this reuse alternative than under the Reuse Plan Alternative. No mitigation is required.
- As under the Reuse Plan Alternative, expanding the golf course would not result in significant visual impacts. No mitigation is required.
- As described under the Reuse Plan Alternative, reuse of Building 513 at the Main Entrance would not substantially change the existing character of the area and would therefore not be a significant visual impact. The causeway entrance would be relandscaped, which would improve the aesthetics of the area. No mitigation is required.
- As under the Reuse Plan Alternative, reducing units and providing landscaping in Roosevelt Terrace would be a beneficial impact. No mitigation is required.

4.5.4 Open Space Alternative

Under the Open Space Alternative, infill and redevelopment activities would be less than under the Reuse Plan Alternative or Medium Density Alternative reuse. The golf course and rifle range would be removed from the island, and no development of Reuse Area 10 would occur. Constructing the southern crossing would not occur under this alternative.

Impact 1. A significant and mitigable visual impact would result from constructing new trails visible from viewpoints of high viewer sensitivity. Walking, cycling, and equestrian trails, proposed as part of reuse in the regional park area, would be visible from viewpoints with high viewer sensitivity, as described for the Reuse Plan Alternative.

Mitigation 1. Same as for the Reuse Plan Alternative.

Impact 2. A significant and mitigable impact would result from relocating the equestrian facility to the regional park area. Relocating the equestrian facility

to the regional park area, would make it visible from several areas of high viewer sensitivity, as described for the Reuse Plan Alternative.

Mitigation 2. Same as for the Reuse Plan Alternative.

Nonsignificant Impacts

- The infill and redevelopment activities for reuse proposed under this alternative would be less than under the Reuse Plan Alternative since reduced reuse development would occur. As under the Reuse Plan Alternative, these impacts would not be significant. No mitigation is required.
- Eliminating the golf course and rifle range and converting the land to a regional park and recreation uses would result in a negligible change in landscape character. This impact would not be significant and no mitigation is required.
- Reusing Building 513 at the Main Entrance would not substantially change the existing character of the area and would therefore not be a significant visual impact. The causeway entrance would be relandscaped, which would improve the aesthetics of the area. No mitigation is required.
- Reducing the number of units and providing landscaping in Roosevelt Terrace would be a beneficial impact, as described for the Reuse Plan Alternative. No mitigation is required.

4.5.5 No Action Alternative

No new construction and minimal demolition would occur under this alternative. Periodic maintenance would be carried out to limit deterioration.

Nonsignificant Impacts

- Some building deterioration and landscape alteration would occur under this alternative. The resulting changes in the appearance of the existing landscape from sensitive viewpoints would be negligible; therefore this impact would not be significant. No mitigation is required.
- Roosevelt Terrace would continue to be boarded up under this alternative. This represents a change from preclosure conditions, but the presence of boarded up buildings would not be considered a significant visual impact of this alternative. No mitigation is required.

4.6 BIOLOGICAL RESOURCES

This section analyzes potential impacts of disposal and reuse of Federal surplus property at Mare Island on biological resources. Issues examined include sensitive species, sensitive habitats, and nonsensitive species and habitats. All impacts are analyzed against existing conditions at Mare Island Naval Shipyard.

Region of Influence

The ROI for biological resources includes the shipyard, Mare Island Strait, Carquinez Strait, adjoining portions of San Pablo Bay, the historic marshlands just north of Mare Island (including Cullinan Ranch), and nearby areas in Vallejo (the Main Entrance and Roosevelt Terrace) that are part of the shipyard. Included in the ROI are resources on Mare Island that are limited or restricted in movement (plants, reptiles, and small mammals) and those that are more mobile and can range on and off Mare Island from surrounding habitat areas (fish, birds, and large mammals).

Significance Criteria

Impacts to biological resources would be considered significant if the disposal and reuse actions were to result in substantial disruption to or destruction of any endangered or threatened species, their habitat, migration corridors, or breeding areas. Actions resulting in the loss of a substantial number of individuals of any plant or animal species (sensitive or nonsensitive species) that could affect abundance or diversity of that species beyond normal variability would also be considered significant. Additionally, significant impacts may result from the measurable degradation of sensitive habitats, particularly wetlands. Impacts to sensitive species, such as those on the California Native Plant Society lists 1A, 1B, 2, 3, or 4, candidate species with no other protection, and species of local concern would be considered adverse but not significant.

The determination of significant impacts to biological resources includes direct and indirect impacts. Direct impacts are those in which activities reduce or remove a biological resource, such as the results of construction or grading. Indirect impacts could occur when the activity causes other actions that affect biological resources. For example, if more people lived on the Island and used the wetland, grassland, and oak woodland areas for recreation, then indirect impacts may occur to sensitive species from heavier pedestrian use of these areas. Indirect impacts also may occur from the introduction of runoff materials into sensitive habitats, such as wetlands. Cumulative significant impacts may occur when the combined impacts of several developments substantially affect individually insignificant species,

populations, or habitats. Potential impacts of reuse on state reversionary land and land subject to transfer to other Federal agencies are discussed in Section 5.5, Cumulative Impacts.

Impacts may be temporary or permanent. An example of a temporary impact would be tracks left by heavy machinery through undisturbed habitat. Examples of permanent impacts would be construction in an undisturbed area or a reduction in the number of individuals in a species population below levels needed to continue the population. Table 4-12 summarizes impacts to biological resources and their significance.

TABLE 4-12
SUMMARY OF BIOLOGICAL RESOURCES IMPACTS AND SIGNIFICANCE

IMPACT ISSUES	NAVY ACTIONS		COMMUNITY REUSE ALTERNATIVES		
	Disposal	No Action Alternative	Reuse Plan	Medium Density	Open Space
Conveyance of property with significant biological resources to non-Federal entities	◐	○	○	○	○
Disturbance of wetlands Mason's lilaeopsis salt marsh harvest mouse and clapper rail from construction of southern crossing.	○	○	◑	○	○
Impact on marsh gumplant from disturbance of wetlands areas.	○	○	◐	◐	◐
Impacts to salt marsh harvest mouse and clapper rail habitat from residents and domestic and feral animals.	○	◐	◐	◐	◐
Impact to salt marsh harvest mouse and clapper rail habitat from development of Reuse Area 12.	○	○	◐	◐	◐
Impact on endangered and threatened fish from use of dry docks and other in-water activities.	○	○	◐	◐	◐
Impacts to Mexican free-tailed bats from building reuse.	○	○	◐	◐	◐
Impacts to other sensitive mammal species.	○	○	◐	◐	◐
Impacts to wetlands from adjacent reuse construction activities.	○	○	◑	◑	◑
Impacts on coast live oak communities from redevelopment in Reuse Area 12.	○	○	◐	◐	◐
Impacts to northern coastal shrub from soil compaction, erosion, and vandalism.	○	○	◐	◐	◐

LEGEND:

Level of Impact

- ● = Significant and not mitigable
- ◑ = Significant and mitigable
- ◐ = Nonsignificant
- ○ = None

Planning Issues and Processes

Section 7 Biological Opinion. Compliance with Federal and state regulations affecting biological resources on Mare Island has resulted in the preparation of a USFWS Biological Opinion, which was issued following the Section 7 consultation process under the Federal Endangered Species Act, 16 U.S.C. §1536. The Biological Opinion is included in Appendix F and consists of detailed agreements between the Navy and the USFWS regarding protection of endangered and threatened species at Mare Island. Following disposal of Mare Island Naval Shipyard, Vallejo will implement these requirements. Correspondence relating to the Section 7 consultation resulting in the Biological Opinion is provided in Appendix C. As part of the agreement, habitat for the California clapper rail and the salt marsh harvest mouse on surplus property will be protected under conservation easements. As part of each reuse alternative for Mare Island, Vallejo and the Navy will implement the following measures for endangered and threatened species protection and management.

The Navy will ensure that a detailed, active, annual, predator management plan for all portions of Mare Island Naval Shipyard is developed and implemented during caretaker status. The plan will not exceed 20 hours per week of field effort and will be implemented within 6 months after a ROD on the EIS/EIR. The Navy will also develop a detailed plan which effectively manages public access in and adjacent to clapper rail and salt marsh harvest mouse habitat. Upon conveyance of Federal surplus property at Mare Island, Vallejo then will be responsible for implementing a similar active predator management program, not to exceed 20 hours per week, and a human access management program. In addition, Vallejo will establish covenants, conditions, and restrictions (CC&Rs) to limit the number of cats and dogs allowed in each residential unit on Mare Island and will prohibit unleashed dogs and cats outside property lines of individual units. These restrictions will be enforced through the CC&R enforcement process or through the Vallejo Municipal Code.

The Navy and Vallejo will protect the delta smelt and Sacramento splittail during caretaker status and subsequent community reuse, respectively. Prior to transferring or leasing the dry docks or any other area where in-water activities may adversely affect delta smelt or Sacramento splittail, the Navy will inform the future owner or user that Federally listed endangered or threatened fish species occasionally occur in the vicinity of Mare Island Naval Shipyard. These fish species may enter dry docks during flooding and dewatering activities. Such future users may need to obtain an Endangered Species Act incidental take permits from USFWS, National Marine Fisheries Service (NMFS), and CDFG (USFWS 1997).

A small amount of Mare Island open space areas providing endangered species habitat is surplus Federal land, while a larger amount of the habitat area is state reversionary land or land subject to transfer to the USFWS (Figure 3-14). The surplus land, which accounts for approximately 10 percent of the on-island habitat for the salt marsh harvest mouse and California clapper rail, will become available for conveyance and therefore potentially vulnerable to adverse impacts through reuse activities. As described in Chapter 2, during the disposal process, the Navy will place conservation easements on endangered species habitat of the California clapper rail and the salt marsh harvest mouse located on surplus land (Figure 1-5). These easements are consistent in all of the reuse alternatives described in this EIS/EIR. The easements will ensure preservation of these lands for the protection of these endangered species and their habitat, regardless of any future changes in land ownership. The Navy is precluded from establishing similar restrictive easements on land reverting to the State of California. For the area of Mare Island that will revert to the state, consultation between the state and Federal agencies will occur regarding protection of biological resources.

MOU for Operation of Dredge Ponds. The 1988 MOU between the Navy and USFWS for maintenance of the dredge ponds at Mare Island, would not transfer with property disposal. Previously active dredge ponds are either on state reversionary property or property transferring to the USFWS. Vallejo, or any other entity proposing to reactivate the dredge ponds would be required to consult with the USFWS to consider modification or replacement of the Navy/USFWS MOU. See Section 5.5, Cumulative Impacts, for a more detailed discussion of impacts to dredge ponds and from proposed use of dredge ponds.

Areas of No Impact

Several of the reuse areas and off-site properties (located primarily on surplus land) do not sustain any significant biological resources. These are Reuse Areas 1, 2, 3, and 4 (excluding the dry docks), Reuse Areas 5, 7, 9, and 11, the Main Entrance, the Causeway, and Roosevelt Terrace. These areas are currently intensely urbanized, and future use is projected to continue this pattern. The golf course (Reuse Area 11) is landscaped and maintained using fertilizers and pesticides, and the rifle range (Reuse Area 7) is heavily disturbed by range-related activities. There would be no impact to biological resources from disposal, caretaker activities or from reuse of these areas provided the Navy or the city (or other future non-Federal owners), implement the endangered species and wetland protection measures described in Appendix F.

Sensitive Fish and Wildlife. None of the reuse alternatives would affect the endangered California freshwater shrimp. This species is not known to exist on Mare Island, and its preferred freshwater stream habitat does not exist on Mare Island. There would be no impact on the northwestern pond turtle since suitable freshwater habitat for this species does not exist on Mare Island.

The alternatives also would not impact the California brown pelican, American peregrine falcon, California black rail, or western snowy plover, provided the Navy and city or other future non-Federal owners implement the requirements of the Biological Opinion. The California brown pelican is a fish eater that primarily uses the waters surrounding Mare Island for feeding and nests on the southern California Channel Islands. Open space habitat that periodically might be used by the American peregrine falcon would be retained. California black rail are found in wetland areas on the west side of the island. These lands would revert to the State of California, and any development would require consultation under Section 10a of the Endangered Species Act. All existing threatened and endangered species wetlands habitat would be retained and protected by conservation easements. The only record of a western snowy plover at Mare Island is a report of 1 individual in 1981 (Napa-Solano Audubon Society 1994). Since it is unlikely that this species nests at Mare Island, it would not be adversely affected by any of the alternatives. There would be no significant impacts to other sensitive bird species listed in Table 3-15 because their habitat would not be significantly affected by any reuse alternative.

4.6.1 Disposal

Nonsignificant Impacts

- The disposal of surplus Federal property at Mare Island would convey property containing habitat for the California clapper rail, salt marsh harvest mouse, and other sensitive biological species found in wetlands to non-Federal entities. Pursuant to Executive Order 11990, 42 Fed. Reg. 26961 (1977), the Navy would reference in the conveyance documents any uses restricted under Federal, state or local wetlands regulations and attach any other appropriate restrictions to future property uses. Conservation easements will be established on these properties to protect these sensitive biological resources. It is expected that the USFWS would hold the easement and that the City of Vallejo, or other non-Federal entity, would take ownership of the underlying fee. Holding the easement will allow the USFWS to restrict development through enforcement of its real estate rights as well as through its regulatory authority to protect endangered and threatened species. The Navy would not retain that responsibility after

property disposal. The establishment of these easements would reduce the impact to a nonsignificant level. No mitigation is required.

4.6.2 Reuse Plan Alternative

Impacts to Sensitive Plants

Impact 1. A significant and mitigable impact would result from construction of the southern crossing bridge in Reuse Area 10 on Mare Island. Constructing the bridge in this area could disturb the area of sensitive habitat which will be covered by a conservation easement. This wetland area provides habitat for Mason's lilaeopsis, the salt marsh harvest mouse and the California clapper rail. Constructing the southern crossing in this area could remove a considerable portion of the habitat in that area.

Mitigation 1a. Develop mitigation requirements for impacts to Mason's lilaeopsis in consultation with CDFG and USFWS. Mitigation could include avoidance of areas where the plants are found, relocation or transplantation of affected individuals, creation of a new population in a suitable environment, or enhancement and/or protection of a threatened population off-site. Bridge construction plans would be required to incorporate requirements of CDFG and USFWS, which would mitigate impacts to a nonsignificant level.

A permit from the US Army Corps of Engineers (COE) under Section 404 of the Clean Water Act, 33 U.S.C. §1251 *et seq.*, would be required for any fill placed in the wetland. As a Federal agency the COE would be required to enter into consultation with the USFWS under Section 7 of the Endangered Species Act to ensure that no jeopardy to listed species (salt marsh harvest mouse and clapper rail) would result from the action. Habitat conservation and other mitigation measures developed through the Section 7 consultation are usually incorporated into Federal projects (actions). A successful consultation results in a "non-jeopardy" Biological Opinion from the USFWS and effectively serves as the Federal applicant's permit for incidental take. The COE probably would not issue a permit unless the USFWS rendered a "non-jeopardy" Biological Opinion, which would incorporate mitigations for the listed species thereby reducing impacts to a nonsignificant level.

Mitigation 1b. Do not locate the southern crossing bridge in Reuse Area 10. Implementing this mitigation measure would reduce the impacts to a level of nonsignificance.

Nonsignificant Impacts

- Reuse activities could affect the List 4 marsh gumplant because it inhabits many of the wetland areas on the island on surplus land (see Figure 3-13a). This plant is not uncommon in the Bay Area and not considered to be susceptible to threat from development. Populations of marsh gumplant on Mare Island will be protected by the conservation easements established on wetland areas for endangered species protection. This impact would therefore not be significant. No mitigation is required.

Impacts to Sensitive Fish and Wildlife

Nonsignificant Impacts

- Residents living in the housing in Reuse Areas 6 and 8 could trample salt marsh harvest mouse and clapper rail habitat adjacent to these housing areas, and their dogs or cats could harass or kill endangered species in these areas. Feral cats and other non-native predators displaced through reuse of the warehouses they currently use for shelter could also migrate into wetland areas and kill endangered, threatened, or other sensitive species.

  These impacts would not be considered significant because public access and predator control measures, including predator management and restrictions on pet ownership, are included as part of the project description for all alternatives. In accordance with the Section 7 consultation for Mare Island (see Biological Opinion in Appendix F), Vallejo will assume responsibility for public access and predator management for each portion of the surplus property at Mare Island as it is conveyed from Federal ownership. No mitigation is required.

- Recreational use of Reuse Areas 12 could result in an indirect adverse effect on the salt marsh harvest mouse if trails and access routes are not provided to direct visitors around, rather than through, sensitive wetlands and endangered species habitats. Reuse Area 12 is primarily in surplus land, with a small portion in state reversionary land. This impact would not be considered significant because these areas would be protected under conservation easements. No mitigation is required.

- In-water activities in the vicinity of Mare Island may impact the Federally listed endangered winter-run chinook salmon, the Federally listed threatened delta smelt, the Sacramento splittail, which is proposed for Federal listing as a threatened species, and other sensitive species, such as the longfin smelt and green sturgeon. In-water activities may

include use of the dry docks, dredging, and pile driving, which are further described in Section 4.7 and in the USFWS Biological Opinion (Appendix F). Surveys show that individuals of these listed and proposed species occur only occasionally near Mare Island and the impact would therefore be nonsignificant (see Appendix F, Summary of Delta Smelt and Sacramento Splittail).

An occasional loss of an individual of these species would not constitute a significant impact to these species nor jeopardize their continued existence, but could require an incidental take permit under the Federal and state Endangered Species Acts. In addition, any dredging would require a permit from the COE for the activity. Because the COE is a Federal agency it is required to enter into a consultation process with the USFWS under Section 7 of the Endangered Species Act.

Incidental take permits may include any of the following measures (see Biological Opinion in Appendix F for more detail). Diversions should be screened using a maximum approach velocity of 0.2 feet per second. Destruction of spawning and refugial habitat may be minimized by avoiding areas with submersed plants or enhancing or creating similar habitat (USFWS 1997).

- The common Mexican free-tailed bat has been identified at 30 of 360 buildings surveyed at Mare Island and may be affected if bats are removed in the process of reuse. Bats can be removed from Mare Island buildings under health regulations without extensive environmental documentation unless endangered or threatened species are involved. This impact would not be significant because no endangered, threatened, or sensitive bat species were identified as inhabiting Mare Island. No mitigation is required.

- Impacts to other sensitive mammal species listed in Table 3-15 could be adverse but not significant because they are not listed as endangered or threatened, a substantial number of individuals would not be expected to be destroyed, and no migration corridors would be disrupted. The shrew and salt marsh wandering shrew live in wetland habitats on the island. The San Pablo vole and San Francisco dusky-footed woodrat reside in undeveloped areas in the region. Since no undeveloped areas would be altered, these species would not be affected. No mitigation is required.

Impacts to Sensitive Habitats

Impact 2. A significant and mitigable impact could result from construction adjacent to wetland areas. Reuse activities proposed for areas adjacent to

wetlands could involve construction that could affect portions of wetland communities. Areas adjacent to wetlands include all areas except Reuse Areas 4, 5, and 9. Wetlands adjacent to these reuse areas are located on surplus land, land subject to transfer to the USFWS, and state reversionary land.

Mitigation 2. Wetland areas would require a permit from the COE under Section 404 of the Clean Water Act for any fill placed in the wetland. The COE permit may include mitigation measures, such as wetland restoration or creation for wetland values and functions lost. Avoid impacts to wetlands on Mare Island by implementing practices that do not allow construction or staging to occur in wetland areas, and prohibit access to wetlands when entering or exiting proposed development areas. Restrict all vehicle and pedestrian traffic to existing trails and roads. Implementing these measures would reduce the impact to a nonsignificant level.

Nonsignificant Impacts

- Impacts to coast live oak communities could result from developing regional park facilities in Reuse Area 12. Impacts could range from the direct removal of trees to indirect impacts from soil compaction, erosion, and vandalism. This impact is considered adverse but not significant because these communities are not listed as sensitive but are of concern to local experts due to the substantial reduction of this community within the Bay Area. No mitigation is required.

- Indirect impacts to northern coastal scrub communities may result from soil compaction, erosion, and vandalism in Reuse Area 12. This impact would be considered adverse because this community is largely composed of native vegetation but would not be significant because this community is not a listed concern of resource agencies. No mitigation is required.

4.6.3 Medium Density Alternative

Differences between the Reuse Plan Alternative and the Medium Density Alternative could reduce impacts to Mare Island biological resources. These differences include the elimination of residential and southern crossing bridge developments in Reuse Area 10 and reducing development densities overall. There would be no impacts to Mason's lilaeopsis, or other habitat from construction or increased vessel traffic.

Impacts to Sensitive Plants

Nonsignificant Impacts

- Impacts to the marsh gumplant would not be significant, as discussed under the Reuse Plan Alternative. No mitigation is required.

Impacts to Sensitive Fish and Wildlife

Nonsignificant Impacts

- Impacts to the salt marsh harvest mouse and clapper rail habitat from residents and pets in the housing area and from feral cats and other predators would be nonsignificant, as described under the Reuse Plan Alternative.

- Development of Reuse Area 12 could impact the salt marsh harvest mouse habitat on surplus land. This impact would be nonsignificant because this area would be protected under conservation easements, as described under the Reuse Plan Alternative. No mitigation is required.

- Impacts to winter-run chinook salmon, delta smelt, Sacramento splittail, longfin smelt, and green sturgeon, from dry dock operations and other in-water activities on surplus land would not be significant, as described for the Reuse Plan Alternative. No mitigation is required.

- Impacts to bats could occur under this alternative, as described under the Reuse Plan Alternative. These impacts would be considered adverse but not significant. No mitigation is required.

- Impacts to sensitive mammal species other than the salt marsh harvest mouse may occur under this alternative, as described under the Reuse Plan Alternative. These impacts would be considered adverse but not significant. No mitigation is required.

Impacts to Sensitive Habitats

Impact 1. A significant and mitigable impact could result from construction adjacent to wetland areas as described under the Reuse Plan Alternative.

Mitigation 1. Same as for the Reuse Plan Alternative.

Nonsignificant Impacts

- Impacts to coast live oak woodlands in Reuse Area 12 would be the same as those for the Reuse Plan Alternative. These impacts would not be significant. No mitigation is required.

- Impacts to northern coastal scrub in Reuse Area 12 would be the same as those for the Reuse Plan Alternative. These impacts would not be significant. No mitigation is required.

4.6.4 Open Space Alternative

Under the Open Space Alternative, the golf course and rifle range would be removed, Reuse Area 10 would not be developed, and the southern crossing bridge would not be constructed. Impacts to biological resources relating to these uses would therefore not occur under this alternative.

Impacts to Sensitive Plants

Nonsignificant Impacts

- Impacts to the marsh gumplant would not be significant, as discussed under the Reuse Plan Alternative. No mitigation is required.

Impacts to Fish and Wildlife

Nonsignificant Impacts

- Impacts to the salt marsh harvest mouse and clapper rail habitat from the residents and pets in the housing area and from feral cats and other predators would be the same as those under the Reuse Plan Alternative.

- Impacts to the salt marsh harvest mouse and clapper rail habitat from development of Reuse Area 12 would be the same as those described under the Reuse Plan Alternative. No mitigation is required.

- Impacts to winter-run chinook salmon, delta smelt, Sacramento splittail, longfin smelt, and green sturgeon from dry dock operations and other in-water activities would not be significant, as described for the Reuse Plan Alternative. No mitigation is required.

- Impacts to bats could occur under this alternative, as described under the Reuse Plan Alternative. These impacts would be considered adverse but not significant. No mitigation is required.

- Impacts to sensitive mammal species other than the salt marsh harvest mouse may occur under this alternative, as described under the Reuse Plan Alternative. These impacts would be considered adverse but not significant. No mitigation is required.

Impacts to Sensitive Habitats

Impact 1. A significant and mitigable impact could result from construction adjacent to wetland areas as described under the Reuse Plan Alternative.

Mitigation 1. Same as for the Reuse Plan Alternative.

Nonsignificant Impacts

- Impacts to coast live oak woodlands in Reuse Area 12 would be the same as those for the Reuse Plan Alternative. These impacts would not be significant. No mitigation is required.

- Impacts to northern coastal scrub in Reuse Area 12 would be the same as those for the Reuse Plan Alternative. These impacts would not be significant. No mitigation is required.

4.6.5 No Action Alternative

Under the No Action Alternative, the former shipyard would be placed in Navy caretaker status. There would be no new construction and minimal demolition under this alternative. The Navy would implement the public access and predator management programs described in the Biological Opinion. Remediation activities would continue, and USFWS would be consulted if impacts to listed species and their habitats are anticipated.

Nonsignificant Impacts

- Feral cats or other non-native predators that are displaced from abandoned or demolished buildings could emigrate into nearby wetlands and kill endangered, threatened, or other sensitive species. Because this alternative would not involve an increase in humans or pets, this impact is considered to be adverse but not significant. In addition, predator control measures and a public access plan would be implemented (see Biological Opinion in Appendix F). No mitigation is required.

4.7 WATER RESOURCES

This section presents an analysis of the impacts of the Reuse Plan Alternative and of the other alternatives on water resources. Issues examined include stormwater runoff, surface water quality, and flooding potential. All impacts are analyzed against conditions existing at Mare Island in 1995.

Region of Influence

The ROI is limited to the immediate Mare Island environs and surrounding water bodies (Mare Island Strait, Napa River, and northeastern San Pablo Bay). It includes the reversionary and Federal transfer property at Mare Island.

Significance Criteria

Significant impacts related to water resources would result from substantial flooding or erosion, adverse affects on any significant water body, such as a stream, lake, or bay, exposure of people to reasonably foreseeable hydrologic hazards, such as flooding or tsunamis, or adverse affects to surface or ground water quality or quantity. The 100-year recurrence interval for floodplains, tsunami runup, and tidal flood hazards is used as the significance criteria for those aspects of this study. Table 4-13 summarizes the impacts and their significance.

Planning Issues and Process

Dredging in the San Francisco Bay estuary is the subject of a cooperative regional planning effort being conducted by a number of Federal and state agencies. A long-term management strategy (LTMS) for dredging and dredge material disposal from the San Francisco Bay region is in the final stages of preparation. The focus of the LTMS is on reducing the impacts of dredging and dredge material disposal on San Francisco Bay while allowing for continued growth of port facilities. The principal issues relate to disposing the dredge material. Ocean, bay, and upland disposal options have been studied, but much of the effort has been devoted to evaluating upland disposal sites. The EPA, COE, BCDC, and San Francisco RWQCB, as well as numerous other agencies and the public, are involved in the planning effort. Dredging and dredge material disposal associated with reuse of Mare Island would be affected by the final LTMS. The relationship of the LTMS to dredge disposal ponds on the island is addressed in Chapter 5, Cumulative Impacts; dredging issues relating to reuse options along Mare Island Strait are addressed in this section.

TABLE 4-13
SUMMARY OF WATER RESOURCES IMPACTS AND SIGNIFICANCE

IMPACT ISSUES	NAVY ACTIONS		COMMUNITY REUSE ALTERNATIVES		
	Disposal	No Action Alternative	Reuse Plan	Medium Density	Open Space
Stormwater runoff from impervious surfaces	○	◐	◐	◐	◐
Increased erosion/sedimentation	○	○	◑	◑	◑
Spills and accidental release of water quality contaminants	○	○	◐	◐	◐
Discharges of contaminated water into Mare Island Strait	○	○	◐	◐	◐
Exposure to 100-year flood hazard	○	◐	◑	◑	◑
Increased risk of Napa River flooding	○	◐	◐	◐	◐
Changed salinity in Mare Island Strait	○	◐	◐	◐	◐
Release of contaminated sediments through berthfront dredging	○	○	◑	◑	◑
Impairment of off-site marine facility access	○	○	○	○	○

LEGEND:

Level of Impact
● = Significant and not mitigable
◑ = Significant and mitigable
◐ = Nonsignificant
○ = No impact

Congressional authorization and funding for dredging the Navy Channel in the Mare Island Strait to a depth of 36 feet was rescinded at the end of 1996 when it was no longer needed by the Navy. Vallejo has requested that the COE continue to dredge the channel to a depth of -30 feet to support general navigation. The COE has agreed to this request and is scheduled to dredge the channel in early 1998. Users of the Napa River above the Causeway Bridge may request that a channel be maintained through Mare Island Strait at a minimum depth of -15 feet MLLW. It is not known how often, or whether, any dredging of Mare Island Strait would be needed to maintain this depth. The reuse plan does not identify or specify the needs of future shipping tenants at Mare Island.

A number of permit issues would need to be resolved before Vallejo could perform berthfront dredging or dispose of sediment in the dredge ponds. Vallejo would need to be permitted by the COE and BCDC to continue berthfront dredging. Upland dredge disposal sites are subject to permit from the RWQCB and possibly BCDC if disposal were on lands within BCDC's jurisdiction. Most of the existing dredge disposal areas are located on state reversionary land and any use of these areas would require agreement by the State Lands Commission.

Dredging Options

The type and amount of dredging required by reuse under the Reuse Plan Alternative has not been determined at this time, but the following dredging scenarios would not be precluded by the proposed reuses on Federal surplus land:

- Shallow-draft marine industries, such as ship dismantling or repair, require a channel depth not exceeding -15 feet MLLW that would require minimal berthfront maintenance dredging.

- A break bulk cargo terminal or shipbuilding facility would require a deeper channel, of approximately -32 feet MLLW. Vallejo or another future property owner could request that the COE maintain a portion of the Federal channel to a depth of -32 feet MLLW. Implementing this request would be subject to economic review by the COE and would need to be consistent with BCDC's Seaport Plan.

- Modern container cargo terminals could be developed at Mare Island. The depth requirements of such terminals would be in the range of -45 feet MLLW. This would require extensive and frequent berthfront and channel dredging and is considered unlikely due to the high cost of additional dredging.

Areas of No Impact

The following were found to have no impact upon water resources under any of the alternatives:

- There would be no increase in runoff from Roosevelt Terrance. Runoff from Roosevelt Terrace and the Main Entrance would not increase under the Reuse Plan Alternative. Reducing the housing density at Roosevelt Terrace and developing additional landscaped areas would decrease runoff compared to existing conditions. Additionally, Roosevelt Terrace and the Main Entrance would not be subject to existing or future flood hazards.

- There would be no alteration to ground water quality. Implementing reuse would not alter ground water quality underlying the site, and ongoing ground water cleanup operations would continue.

- There would be no increase in use of ground water. Reuse of shipyard properties would not increase the use of local ground water on the site. Precipitation infiltrating the upper ground water layer would not be affected substantially by implementing the Reuse Plan Alternative. The

springs on the site also would remain unaffected, as no substantial development is proposed in those areas or in their watersheds.

4.7.1 Disposal

The disposal action would result in no direct impacts to hydrologic or water quality conditions at Mare Island or directly expose people to flooding since it is essentially a transfer of title. The Navy will, however, include appropriate notifications in the deeds for any parcels that lie within floodplains consistent with Executive Order 11988, 42 Fed. Reg. 26951 (1977).

4.7.2 Reuse Plan Alternative

Stormwater Runoff

Nonsignificant Impacts

- New impervious surface would increase stormwater runoff, which would be accommodated by the planned improved stormwater system. Under the Reuse Plan Alternative, substantial new impervious surfaces would be developed in Reuse Area 1, and some additional impervious surfaces developed in Reuse Areas 2, 3, 6, and 10. The additional stormwater runoff resulting would be directed into the existing storm drain system (Section 3.12) that empties into Mare Island Strait at about 65 locations. This system is inadequate to handle existing runoff in major storms and would not handle increased runoff from new impervious surfaces.

  The proposed Capital Improvement Program (CIP) includes funding for major repairs and upgrading of the island's stormwater system to improve hydraulic efficiency and consolidate the outfalls to 8 locations to comply with NPDES regulations for stormwater quality. Implementing the proposed CIP for stormwater system improvements at the same time that new impervious surfaces are proposed in each development area and full compliance with the RWQCB's NPDES permit requirements for the site and Vallejo would reduce this impact to less than significant. No mitigation is required.

Surface Water Quality

Impact 1. A significant and mitigable impact to water resources would result from increased erosion/sedimentation into Mare Island Strait. Grading, demolition, and construction of buildings required for reuse of on- and off-island areas could result in soil disturbance and increased erosion/sedimentation into Mare Island Strait. NPDES construction stormwater permit requirements would require preparation of an SWPPP.

Mitigation 1. Develop erosion control plans consistent with the SWPPP prior to any site clearing or grading. Where necessary, install erosion control structures (i.e., silt fences and hay bales) prior to the start of the rainy season (October 15) to remain through the end of that season (April 15). Include a best management practices (BMP) program for stormwater collection as part of the reuse project. Focus the BMP program on containing and controlling land use activities to prevent the generation of pollutants that might affect water quality; preventing and controlling stormwater runoff; and retaining and treating runoff on-site before it infiltrates the ground water or is released into the bay. Where appropriate, give nonstructural BMPs preference over structural BMPs. Use management measures and practices in the BMP program identified by the EPA in the Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters and the California Stormwater Best Management Practice Handbook. Develop the BMP program to be consistent with the requirements of the State Water Resources Control Board and the RWQCB. Implementing these mitigations would reduce the impact to a nonsignificant level.

Nonsignificant Impacts

- Construction equipment and operations resulting from reuse may result in spills and other accidental emissions of pollutants that could enter and contaminate the surrounding water bodies. This impact would be nonsignificant, as a spill control and countermeasure plan is required to be included in the SWPPP. No mitigation is required.

- Due to cross-connections between the stormwater and sanitary sewer systems, runoff from reuse could result in substantial discharges of contaminated water into Mare Island Strait. This impact would not be significant because the storm drain CIP (included as part of the reuse action) proposed eliminating cross-connections between the sanitary sewer system and the storm sewer system. No mitigation is required.

Flood Hazards

Impact 2. A significant and mitigable impact would result from exposure of Mare Island occupants to flood hazards through location of development in flood zones. Development and reuse of portions of Reuse Area 1 could subject residents, workers, and other occupants of those areas to flood hazards in the event of the 100-year flood, 100-year high tide, or the combination of these events with storm surges or high wave runup. In addition, the projected 1.3-foot sea level rise by 2036 could substantially increase the frequency of tidal and nontidal flooding on the site if not planned for. The portions of Reuse Areas 1, 3, 4, 5, and 10 under an elevation of approximately 10 feet (MSL) could be periodically flooded in the case of a rise in sea level of 1 foot or more,

if not adequately protected. Ongoing maintenance of the existing levees would occur under the reuse plan. Pursuant to Executive Order 11988, projects sited in floodplains would be required to be in compliance with the standards and criteria and consistent with the intent of the National Flood Insurance Program.

Mitigation 2a. Protect any new development at sites below 10 feet MSL from flooding by raising the base level of the site to a minimum of 10 feet MSL. This elevation may be revised as appropriate based on the refinements of estimates of the effects of sea level rise in combination with storm surges. In addition, any new development shall comply fully with the city's Flood Protection Ordinance. All 100-year flood plains on the site shall be mapped by FEMA as part of the FIRM process. For development along the site's eastern waterfront, include an adequate setback to allow the future construction of a berm or seawall to protect the area in the event of a substantial rise in sea level. Rights of way for levees protecting inland areas from tidal flooding shall be sufficiently wide on the upland side to allow for future levee widening to support additional height so that no fill for levee widening is placed in the bay. Implementing these mitigations would reduce the impact to a nonsignificant level.

Mitigation 2b. Locate new development in previously undeveloped areas outside of the 100-year flood zone unless measures are taken to raise these areas above the 100-year flood zone. Implementing this mitigation would reduce the impact to a nonsignificant level.

Dredging

Impact 3. A significant and mitigable impact would result from the exposure of contaminated sediments through berthfront dredging of Mare Island Strait. If contaminated sediment were exposed by future dredging, contaminant dispersion and exposure of organisms in the food chain could occur. Presence of contaminants might also limit dredge material disposal options. The potential and extent of these impacts can only be determined after project specific sediment testing has been conducted and the dredging methods have been determined. Sediment testing must be completed as specified under state and Federal laws and guided by regional policies prior to reviewing permits to dredge and reuse or dispose of material. Dredged material testing has not been completed for this project and therefore the potential for specific impacts due to contamination is unknown and cannot yet be addressed.

Mitigation 3. If, upon completion of dredged materials testing, contaminants are found to be soluble or at insoluble concentrations capable of causing unacceptable water column effects, special precautions and measures will be adopted prior to undertaking dredging. Typically, dredging contaminated

sediments will require the use of special dredging equipment, such as an environmental or closed bucket. Closed clamshell buckets minimize the amount of sediment or water contaminated from the sediment from escaping. Implementing these mitigations would reduce the impact to a nonsignificant level.

Nonsignificant Impacts

- The discontinuance of dredging could increase the risk of flooding in the lower reach of the Napa River by reducing the cross-sectional area of the river, and thereby reducing its capacity to discharge flood flows. However, most flooding is associated with extreme high tide juxtaposed with high runoff. Because of the short length of Mare Island Strait, the reduction in cross-section area would not be expected to significantly alter the tidal range or period and therefore would not have a significant impact on flooding. No mitigation is required.

  The COE is responsible for flood control projects. The COE would perform a quantitative analysis to determine the potential future flooding impacts that would result from shoaling of Mare Island Strait up to the COE-maintained navigational channel depth of -15 feet MLLW. If shoaling from lack of dredging of the channel would adversely affect flooding, a dredging program or other flood control measures should be implemented.

- The discontinuance of channel dredging would reduce the cross-sectional area of Mare Island Strait near the mouth of the Napa River. This could result in a small increase in the velocity of water entering the Mare Island Strait from the Napa River and would have a small effect on salinity at the mouth of the Napa River. Due to the relatively small change in cross-sectional area and the relatively large tidal influence of the Mare Island Strait, this would not be a significant impact. No mitigation is required.

- Discontinuance of dredging would not affect access to the Ferry Terminal, Municipal Marina, or City Yacht Club on city-owned land because these facilities are designed for relatively shallow draft vessels. No mitigation is required.

4.7.3 Medium Density Alternative

Reuses identified under the Medium Density Alternative are generally consistent with the Reuse Plan Alternative. The primary difference is the overall lesser amount of redevelopment proposed under the Medium Density Alternative.

Stormwater Runoff

Nonsignificant Impacts

- The Medium Density Alternative would involve reduced reuse of existing developed areas on the base compared with the Reuse Plan Alternative. Some new impervious surfaces still would be developed in Reuse Area 1, and some additional impervious surfaces may be developed in Reuse Areas 2, 3, 6, and 10. Additional impervious surfaces would result in additional runoff during storms, although this would be somewhat reduced compared with the Reuse Plan Alternative. Implementing the CIP included in the reuse plan would result in a less than significant impact. No mitigation is required.

Surface Water Quality

Impact 1. A significant and mitigable impact to water quality would result from increased erosion/sedimentation into Mare Island Strait as described for the Reuse Plan Alternative but somewhat reduced.

Mitigation 1. Same as for the Reuse Plan Alternative.

Nonsignificant Impacts

- Impacts due to spills during construction operations could occur as for the Reuse Plan Alternative but would be less than significant when the NPDES Construction Stormwater Permit requirements, including the SWPPP, are implemented as required. No mitigation is required.

- As for the Reuse Plan Alternative, impacts from sewer cross-connections would be eliminated when the proposed storm drain CIP is implemented. No mitigation is required.

Flood Hazards

Impact 2. A significant and mitigable impact would result from exposure of Mare Island occupants to flood hazards through development in flood zones as described for the Reuse Plan Alternative, although the population of these areas would be reduced.

Mitigation 2. Same as for the Reuse Plan Alternative.

Dredging

Impact 3. A significant and mitigable impact would result from the exposure of contaminated sediments through further berthfront dredging as described under the Reuse Plan Alternative.

Mitigation 3. Same as for the Reuse Plan Alternative.

Nonsignificant Impacts

- The discontinuance of dredging could increase the risk of flooding in the lower reach of the Napa River by reducing the cross-sectional area of the river, as described for the Reuse Plan Alternative. Because of the short length of Mare Island Strait, the reduction in cross-section area would not be expected to significantly alter the tidal range or period and therefore would not have a significant impact on flooding. No mitigation is required.

- Discontinuance of dredging would reduce the river area, which could increase the velocity of the water in the lower reach of the river, reducing the amount of brackish water that could enter the Napa River channel from the Carquinez Strait during normal flows as described for the Reuse Plan Alternative. Due to the relatively small change in cross-sectional area and the relatively large tidal influence of the Mare Island Strait, this would not be a significant impact. No mitigation is required.

- Discontinuance of dredging would not affect access to the Ferry Terminal, Municipal Marina, and City Yacht Club on city-owned land because these facilities are designed for relatively shallow draft vessels, as described for the Reuse Plan Alternative. No mitigation is required.

4.7.4 Open Space Alternative

The Open Space Alternative focuses on balancing development of the island with preservation of open space and recreational attributes. Development of many of the same reuse areas would occur but to a lesser degree than under the Medium Density Alternative.

Stormwater Runoff

Nonsignificant Impacts

- The Open Space Alternative would involve slightly reduced reuse of existing developed areas on the base compared with the Medium Density Alternative and substantially reduced development compared with the

Reuse Plan Alternative. However, the existing stormwater system is inadequate to handle existing runoff in major storms and would not handle increased runoff from new impervious surfaces. Some new impervious surfaces still would be developed in Reuse Area 1, and limited additional impervious surfaces may be developed in Reuse Areas 2, 3, 6, and 10 on Federal surplus land. No new development would occur in Reuse Areas 11 and 12. Implementing the proposed stormwater system CIP and complying with existing regulatory requirements would reduce impacts to a nonsignificant level. No mitigation is required.

Surface Water Quality

Impact 1. A significant and mitigable impact would result from increased erosion/sedimentation into Mare Island Strait, as described for the Reuse Plan Alternative and the Medium Density Alternative, but at a lesser level.

Mitigation 1. Same as for the Reuse Plan Alternative.

Nonsignificant Impacts

- Impacts due to spills during construction and operation of reuse facilities could occur similar to the Reuse Plan Alternative but would be less than significant when the SWPPP is implemented, as required. No mitigation is required.

- As for the Reuse Plan Alternative, impacts from sewer cross-connections would be eliminated when the proposed storm drain CIP is implemented as part of reuse. No mitigation is required.

Flood Hazards

Impact 2. A significant and mitigable impact would result from the exposure of Mare Island occupants to flood hazards through location of development in flood zones. This alternative would reduce flood hazards to Reuse Areas 3, 5, and 10 compared with both the Reuse Plan Alternative and the Medium Density Alternative.

Mitigation 2. Same as for the Reuse Plan Alternative.

Dredging

Impact 3. A significant and mitigable impact would result from the exposure of contaminated sediments through further berthfront dredging, as described for the Reuse Plan Alternative.

Mitigation 3. Same as for the Reuse Plan Alternative.

Nonsignificant Impacts

- Discontinuance of dredging would reduce the cross-sectional area of the river, thereby reducing its capacity to discharge flood flows, as described for the Reuse Plan Alternative. Because of the short length of Mare Island Strait, the reduction in cross-section area would not be expected to significantly alter the tidal range or period and therefore would not have a significant impact on flooding. No mitigation is required.

- Discontinuance of dredging would reduce the river area, which could increase the velocity of the water in the lower reach of the river, reducing the amount of brackish water that could enter the Napa River channel from the Carquinez Strait during normal flows, as described for the Reuse Plan Alternative. Due to the relatively small change in cross-sectional area and the relatively large tidal influence of the Mare Island Strait, this would not be a significant impact. No mitigation is required.

- Discontinuance of dredging would not affect access to the Ferry Terminal, Municipal Marina, or City Yacht Club on city-owned land because these facilities are designed for relatively shallow draft vessels, as described for the Reuse Plan Alternative. No mitigation is required.

4.7.5 No Action Alternative

The No Action Alternative would considerably reduce impacts to water resources since minimal use of the surplus land would occur. Dredging would no longer be performed in Mare Island Strait. The dredge ponds, dredging equipment, and onshore pumping system would be maintained to facilitate their continued use.

Stormwater Runoff

Nonsignificant Impacts

- This alternative would not increase runoff from the site. Existing localized flooding would continue to occur in heavy rains; however, because there would be minimal use of the site, this would not result in any impact. No mitigation is required.

Surface Water Quality

Nonsignificant Impact

- This alternative would not adversely affect surface water quality. Surface water quality would be improved, compared to preclosure conditions, by eliminating potential erosion from development and oil and grease from vehicles that would otherwise be deposited on the island's roadways and then be washed into the strait. No mitigation is required.

Flood Hazards

Nonsignificant Impacts

- Existing structures in low-lying portions of Reuse Areas 1, 3, 4, 5, and 10 would continue to be subject to flooding, as described for the Reuse Plan Alternative. However, under the No Action Alternative, no occupants would be subject to this hazard. No mitigation is required.

Dredging

Nonsignificant Impacts

- Under the No Action Alternative, the Navy would no longer perform berthfront maintenance dredging. The berths that are currently dredged would gradually fill with sediment until a new equilibrium sediment depth is achieved. However, no shipping is proposed that might be impacted. No mitigation is required.

- Discontinuance of dredging would reduce the cross-sectional area of the river, thereby reducing its capacity to discharge flood flows, as described for the Reuse Plan Alternative. Because of the short length of Mare Island Strait, the reduction in cross-section area would not be expected to significantly alter the tidal range or period and therefore would not have a significant impact on flooding. No mitigation is required.

- Discontinuance of dredging would reduce the river area which could increase the velocity of the water in the lower reach of the river, reducing the amount of brackish water that could enter the Napa River channel from the Carquinez Strait during normal flows, as described for the Reuse Plan Alternative. Due to the relatively small change in cross-sectional area and the relatively large tidal influence of the Mare Island Strait, this would not be a significant impact. No mitigation is required.

- Discontinuance of dredging would not affect access to the Ferry Terminal, Municipal Marina, or City Yacht Club on city-owned land because these facilities are designed for relatively shallow draft vessels, as described for the Reuse Plan Alternative. No mitigation is required.

4.8 GEOLOGY AND SOILS

This section describes the impacts of disposal and reuse related to the geologic conditions on Mare Island and the off-site properties. The principal geologic concerns at Mare Island are seismic hazards associated with ground shaking, lateral spreading, erosion and sedimentation, and slope stability of the southern hillside.

Region of Influence

Potential geological effects from the proposed action would be localized; therefore the ROI for geological impacts of the proposed action includes Mare Island, off-island properties, and adjacent land.

Significance Criteria

A project may result in a significant geologic impact if it exposes people or structures to major geologic hazards (such as slope failure, liquefaction, and ground shaking), limits the recovery of mineral resources, results in a loss of prime agricultural land, causes substantial soil erosion, or adversely affects unique geologic or topographic features. Table 4-14 summarizes the geology and soils impacts resulting from the Reuse Plan Alternative and other alternatives.

TABLE 4-14
SUMMARY OF GEOLOGIC AND SOILS IMPACTS AND SIGNIFICANCE

IMPACT ISSUES	NAVY ACTIONS		COMMUNITY REUSE ALTERNATIVES		
	Disposal	No Action Alternative	Reuse Plan	Medium Density	Open Space
Dam failure hazards	○	◐	◑	◑	◑
Seismic shaking hazards	○	◐	◑	◑	◑
Erosion and sedimentation	○	○	◐	◐	◐
Liquefaction potential hazards	○	◐	◑	◑	◑
Slope stability hazard	○	○	◑	◑	◑

LEGEND:

Level of Impact

● = Significant and not mitigable
◑ = Significant and mitigable
◐ = Nonsignificant
○ = No impact

4.8.1 Disposal

Disposal would involve the conveyance of Federal surplus property at Mare Island out of Navy jurisdiction. In this analysis, geologic impacts would depend only on physical conditions, not on jurisdiction or legal context. Therefore, disposal of the shipyard would not result in any geologic impacts.

4.8.2 Reuse Plan Alternative

Regional and Site Geology

Impact 1. A significant and mitigable impact would be the downslope flooding caused by dam failures. Failure of the dams of the golf course reservoir and the saltwater reservoir in Reuse Area 12, due to structural weakness or erosion due to seepage, could flood downslope areas. Flooding due to failure of the saltwater reservoir dam would occur in the southern end of Reuse Area 10 (Buildings A-266, A-267, A-71, and A-20, and the cemetery). Flooding due to failure of the golf course reservoir dam would primarily impact wetland and open space areas.

Mitigation 1. Implement periodic inspections of the dams for structural soundness by a qualified geotechnical engineer. Mitigation could take the form of lining or reinforcing dams, as necessary. Implementing this mitigation would reduce the impact to a nonsignificant level.

Seismicity

Impact 2. A significant and mitigable impact would result from the structural damage due to ground shaking from a large earthquake. Structural damage resulting from a large earthquake could cause economic loss, infrastructure disruption, and loss of life. Seismic shaking would be most intense in areas built on fill over Bay Mud sediments. Economic damage and potential loss of life would be most significant in existing industrial areas, including Reuse Areas 1, 3, 4, 5, and part of Reuse Areas 9 and 10, where the larger and generally more vulnerable older structures are located. Impacts probably would be less significant in Reuse Areas 2, 6, 8, and 9, which are underlain by geologically more stable materials and contain smaller wood-frame structures. Infrastructure disruption due to vulnerability of utilities and transportation routes to earthquake damage also could be significant.

Mitigation 2. Conduct earthquake vulnerability studies for buildings proposed for reuse. A large number of the existing structures may need to be retrofitted to meet current building codes. Design construction to meet existing seismic requirements. Evaluate infrastructure links to the mainland for vulnerability to earthquakes and develop a seismic contingency plan for restoring essential

services to the island. Implementing these measures would reduce the impact to a nonsignificant level.

Soils and Sediment

Nonsignificant Impact

- Earthmoving activities associated with new construction or demolition of existing buildings could result in less than significant impacts to soils due to soil erosion when uncovered soils are exposed to rainfall and runoff. Most of the proposed new development is in relatively level lowland areas and on previously developed lots in areas with stormwater runoff control. The potential for soil loss due to erosion in these areas would be low. Fine-grained sediments in waterfront areas have low erosion potential. Potential impacts would be greatest on hillslopes or adjacent to waterways. Soil erosion also could impact waterways (see impacts to surface water quality, Section 4.7.1). Erosion control plans consistent with the SWPPP would be prepared. Grading would be implemented to minimize runoff and to control on-site drainage. No further mitigation is required.

Liquefaction Potential

Impact 3. A significant and mitigable impact would result from the exposure of a large number of people to areas with a high potential for liquefaction. All areas outside the historical shoreline and some of the north central area of the island within the historic shoreline, which is underlain by Bay Mud and thin alluvium or engineered fill cover, have potential for liquefaction during an earthquake. The areas where the most significant impacts would be expected to occur, due to location and land use, include Reuse Areas 1, 2, the northern portion of Reuse Area 3, most of Reuse Area 5, the western half of Reuse Areas 6, and 10. Liquefaction would cause increased damage to structures in these areas through the failure of the ground supporting the structure.

Mitigation 3. Evaluate the foundations and design of existing structures to determine whether or not retrofitting these structures would be economically feasible. Such a retrofit would not be necessary until the reuse plan is implemented. Design new structures to meet current building codes. Mitigation may include placing pilings or reinforcing structures. Replace buildings that cannot be made adequately safe. Implementing this mitigation would reduce the impact to a nonsignificant level.

Slope Stability

Impact 4. A significant and mitigable impact would result from slope failure in or adjacent to areas of reuse. Potential for slope failure would be greatest in the proposed golf course (Reuse Area 11) and the regional park (Reuse Area 12) areas. Both areas border Reuse Area 10, where some new development is proposed. The southeastern portion of Reuse Area 9 is within an area marginally susceptible to debris flows and landslides. A slope failure in Reuse Area 9 could significantly impact structures in this area.

Mitigation 4. Perform a thorough geologic evaluation of any new construction site in Reuse Areas 9 and 10 to determine the suitability for construction and any mitigation needed against potential slope failure at the building site or upslope from it. Implementing this mitigation would reduce the impact to a nonsignificant level.

4.8.3 Medium Density Alternative

Regional and Site Geology

Impact 1. A significant and mitigable impact would result from downslope flooding caused by dam failures, as described for the Reuse Plan Alternative. Due to reduced development, this impact would be less than under the Reuse Plan Alternative but would still be significant.

Mitigation 1. Same as for the Reuse Plan Alternative.

Seismicity

Impact 2. A significant and mitigable impact would result from structural damage due to ground shaking from a large earthquake, as described for the Reuse Plan Alternative. Impacts would probably be most significant in Reuse Areas 1, 3, 4, 5, and parts of Reuse Areas 9 and 10. Due to reduced development under this reuse scenario, this impact would be less than that under the Reuse Plan Alternative but would still be significant.

Mitigation 2. Same as for the Reuse Plan Alternative.

Soils and Sediment

Nonsignificant Impact

- The potential for soil erosion as a result of construction or demolition activities would be the same as that described for the Reuse Plan Alternative. Impacts from these activities would be less than significant.

Erosion control plans consistent with the SWPPP would be prepared. Grading would be implemented to minimize runoff and to control on-site drainage. No further mitigation is required.

Liquefaction Potential

Impact 3. A significant and mitigable impact would result from the exposure of large numbers of people to areas with a high liquefaction potential, as described for the Reuse Plan Alternative. Due to reduced development, this impact would be less than that under the Reuse Plan Alternative but would still be significant.

Mitigation 3. Same as for the Reuse Plan Alternative.

Slope Stability

Impact 4. A significant and mitigable impact would result from slope failure in or adjacent to areas of reuse, as described under the Reuse Plan Alternative.

Mitigation 4. Same as for the Reuse Plan Alternative.

4.8.4 Open Space Alternative

Regional and Site Geology

Impact 1. A significant and mitigable impact would result from downslope flooding resulting from dam failures, as described for the Reuse Plan Alternative. Due to reduced development, this impact would be less than that under the Reuse Plan Alternative but would still be significant.

Mitigation 1. Same as for the Reuse Plan Alternative.

Seismicity

Impact 2. A significant and mitigable impact would result from structural damage due to ground shaking from a large earthquake, as described for the Reuse Plan Alternative. The reduced development under this alternative would lessen the impact but would still be significant.

Mitigation 2. Same as for the Reuse Plan Alternative.

Soils and Sediment

Nonsignificant Impact

- The potential for soil erosion as a result of construction or demolition activities would be the same as that described for the Reuse Plan Alternative. Impacts from these activities would be less than significant. Erosion control plans consistent with the SWPPP would be prepared. Grading would be implemented to minimize runoff and to control on-site drainage. No further mitigation is required.

Liquefaction Potential

Impact 3. A significant and mitigable impact would result from the exposure of large numbers of people to areas with high potential for liquefaction, as described for the Reuse Plan Alternative. Due to reduced development, this impact would be less than that under the Reuse Plan Alternative but would still be significant.

Mitigation 3. Same as for the Reuse Plan Alternative.

Slope Stability

Impact 4. A significant and mitigable impact would result from slope failure in or adjacent to reuse, as described under the Reuse Plan Alternative.

Mitigation 4. Same as for the Reuse Plan Alternative.

4.8.5 No Action Alternative

Nonsignificant Impacts

Under this alternative the impacts to the island from seismic events and liquefaction potential could still occur. However, few people would be on the island, and the impacts to public health and safety from those events would not be significant. There would be no impacts related to reuse activities, such as construction and demolition. The need or urgency to evaluate structures to determine their seismic fitness would be greatly reduced, though not eliminated. No mitigation is required.

4.9 TRAFFIC AND CIRCULATION

This traffic and circulation section presents the analysis of the Reuse Plan Alternative and alternatives to this action. Traffic impacts would result from implementing the reuse alternatives and were projected to 2020. The alternatives were analyzed in conjunction with expected development within Vallejo in 2020 and with anticipated regional growth. Impacts are evaluated based on their reduction to system capacity. Since the on-island traffic and circulation system is predominantly on Federal surplus land, on-island impacts would occur primarily on these lands.

Roadway capacities at I-80 and SR 37 would be exceeded in 2020 with or without reuse because of regional traffic increases on these roadways. Although planning studies have identified the need for improvements to accommodate these increases, such improvements have not been proposed for funding. The 1994 Vallejo Citywide Traffic Study identified the need to widen I-80 to 8 lanes. However, there are no pending planned or funded improvements for I-80 through the Vallejo area. Assembly Bill 719 limits expansion of SR 37 to 4 lanes between the east side of the Napa River Bridge to Diablo Street east of SR 29, primarily due to environmental constraints. To accommodate projected increases, SR 37 would need to be widened to 6 lanes. These are considered regionally induced future conditions and are beyond the scope of this transportation analysis to consider or mitigate.

Region of Influence

For transportation analysis the ROI includes regional and local access routes, as well as the Mare Island street system.

Significance Criteria

Transportation impacts are considered significant if substantially greater volumes of traffic would be generated than under preclosure conditions; off-island local access route traffic volumes would exceed roadway capacity; on-island roadway traffic volumes would exceed roadway capacity; parking supply would not meet projected parking demand; and if traffic using the on-island traffic and circulation system would create safety hazards for pedestrians, bicycles and automobiles.

Table 4-15 summarizes traffic impacts and their significance.

TABLE 4-15
SUMMARY OF TRAFFIC IMPACTS AND SIGNIFICANCE

IMPACT ISSUES	NAVY ACTIONS		COMMUNITY REUSE ALTERNATIVES		
	Disposal	No Action Alternative	Reuse Plan	Medium Density	Open Space
Increased volumes on regional access circulation system	○	◐	◐	◐	◐
Increased traffic on local access roadway	○	◐	◐	◐	◐
Increased traffic on causeway	○	○	◐	◐	◐
Increased traffic at north gate access/ramp	○	○	◐	◐	◐
Southern crossing	○	○	◐	○	○
Parking facilities	○	○	◐	◐	◐
Increased truck freight traffic	○	○	◑	◑	◑
Increased rail freight traffic	○	○	◑	◑	◑
Reuse of helipads	○	○	◐	◐	◐
Short-term construction traffic impacts	○	○	◑	◑	◑

LEGEND:

Level of Impact

● = Significant and not mitigable
◑ = Significant and mitigable
◐ = Nonsignificant
○ = No impact

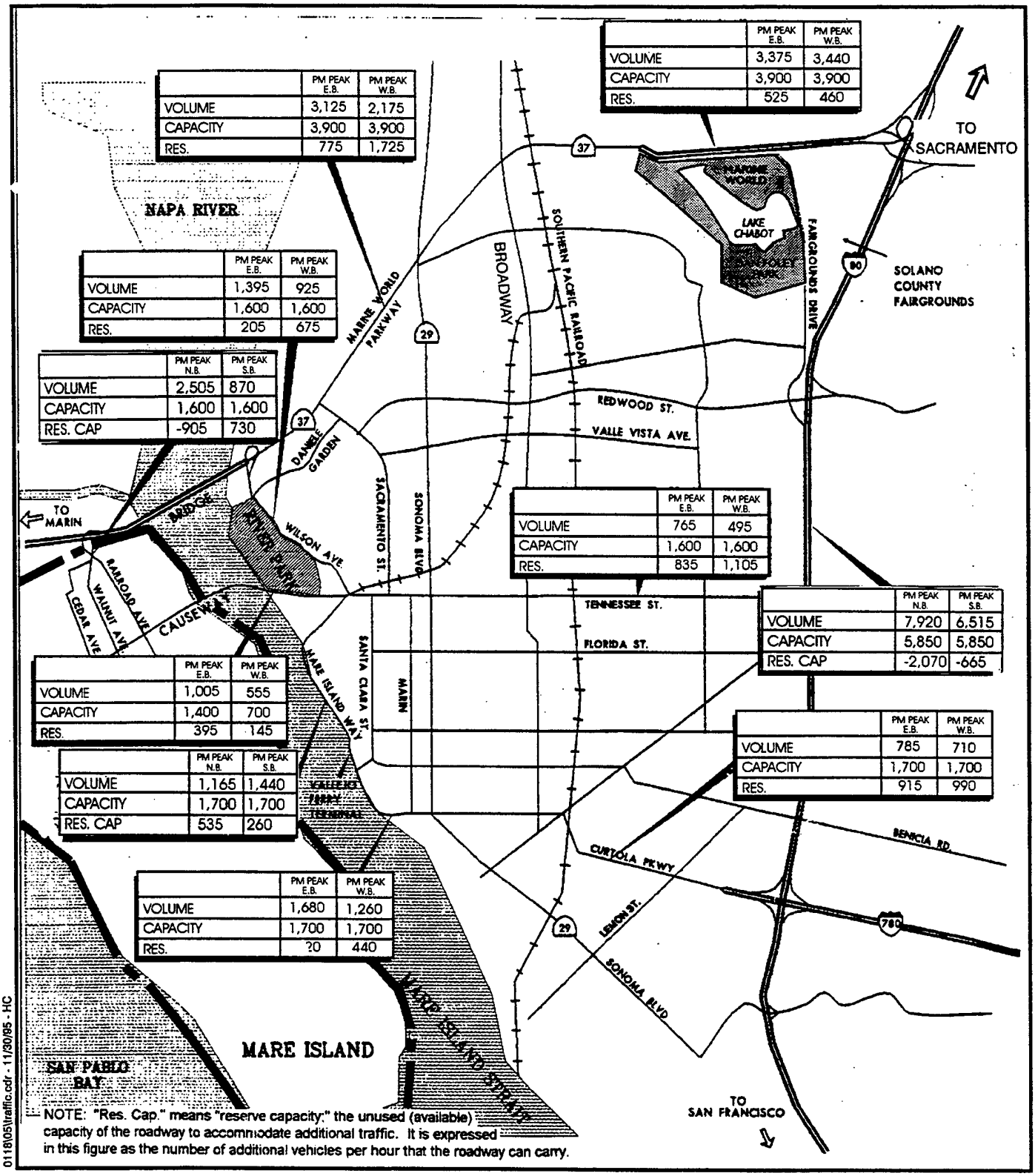
4.9.1 Disposal

Federal disposal of the former Mare Island Naval Shipyard would not represent a development alternative in the sense that it would not stipulate a use for the land. As such, disposal would not affect traffic or circulation with in the ROI and would therefore have no impacts.

4.9.2 Year 2020 Off-island Traffic Volumes

Assumptions and Methodology

To provide a context from which to evaluate future traffic impacts from the Reuse Plan Alternative and other alternatives, year 2020 off-island volumes on the regional and local access routes were projected assuming preclosure shipyard conditions and Vallejo 2020 traffic conditions. Figure 4-1 indicates projected future volumes on regional and local access routes. The following describes the assumptions and methodology used to develop the off-island volumes.



	PM PEAK E.B.	PM PEAK W.B.
VOLUME	3,125	2,175
CAPACITY	3,900	3,900
RES.	775	1,725

	PM PEAK E.B.	PM PEAK W.B.
VOLUME	3,375	3,440
CAPACITY	3,900	3,900
RES.	525	460

	PM PEAK E.B.	PM PEAK W.B.
VOLUME	1,395	925
CAPACITY	1,600	1,600
RES.	205	675

	PM PEAK N.B.	PM PEAK S.B.
VOLUME	2,505	870
CAPACITY	1,600	1,600
RES. CAP	-905	730

	PM PEAK E.B.	PM PEAK W.B.
VOLUME	765	495
CAPACITY	1,600	1,600
RES.	835	1,105

	PM PEAK N.B.	PM PEAK S.B.
VOLUME	7,920	6,515
CAPACITY	5,850	5,850
RES. CAP	-2,070	-665

	PM PEAK E.B.	PM PEAK W.B.
VOLUME	1,005	555
CAPACITY	1,400	700
RES.	395	145

	PM PEAK E.B.	PM PEAK W.B.
VOLUME	785	710
CAPACITY	1,700	1,700
RES.	915	990

	PM PEAK N.B.	PM PEAK S.B.
VOLUME	1,165	1,440
CAPACITY	1,700	1,700
RES. CAP	535	260

	PM PEAK E.B.	PM PEAK W.B.
VOLUME	1,680	1,260
CAPACITY	1,700	1,700
RES.	?0	440

NOTE: "Res. Cap." means "reserve capacity;" the unused (available) capacity of the roadway to accommodate additional traffic. It is expressed in this figure as the number of additional vehicles per hour that the roadway can carry.

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Roadway traffic volumes and capacities define roadway operation.

N

Not to Scale

LEGEND:

Mare Island Naval Shipyard Property Boundaries (excluding submerged land)

Source: Crane Transportation Group, 1994.

Future: Peak Hour Reserve Capacity for Primary Access Routes

Mare Island, California

Figure 4-1

Roadway Improvements

The off-island roadway improvements assumed to be in place at full buildout of Vallejo in 2020 are shown in Table 4-16. All improvements shown are fully funded, except for the SR 37 widening east of Mare Island. This project is planned to be completed by 2005; however, only partial funding has been secured to date. Since all improvements in Table 4-16 are planned to be completed prior to 2020, for purposes of this analysis, the additional roadway capacity provided by these improvements was included for all analyzed conditions. Figure G-1 in Appendix G shows the expected PM peak-hour traffic volumes, roadway capacities, and resultant reserve capacities for primary access routes without improvements to SR 37.

TABLE 4-16
PLANNED PRIMARY ACCESS ROUTE IMPROVEMENTS

Facility	Improvement	Status	Est. Completion
Tennessee Street	Signal coordination	Planned, funded	1995
Wilson Avenue	Widening to 4 lanes/signalization	Planned, funded[1]	1998[2]
Wilson Ave./ M.I. Causeway	Reconfiguration	Planned, funded	1998
Mare Island Way	Widening to 4 lanes/signalization	Planned, funded	1998
SR 37	Upgrade to 4-lane freeway	Planned, partially funded	2005

[1]Subject to mitigation fees being collected; may affect improvement
[2]Aksu 1994

Source: Vallejo 1994c and 1997 as amended by Crane Transportation Group

Trip Generation

Preclosure shipyard activities generated an estimated 9,477 PM peak-hour and 76,350 average daily trips. For purposes of off-island impact analysis, preclosure peak-hour counts at the 2 island access roads have been used as a guideline to identify probable future volumes at these access points.

Trip Distribution

Off-island trips were assigned by the Vallejo traffic model to the primary access roadway system, incorporating improvements described in Table 4-16. The distribution of PM peak-hour traffic on the roadway system is shown on Figure 4-1. Reserve capacities for primary access routes also are indicated on this figure.

Regional Access Circulation System Operation

I-80. In 2020, PM peak-hour travel demand on I-80 just north of Tennessee Street would exceed capacity northbound and southbound. When freeway traffic exceeds capacity during the PM peak hour, the peak commute period increases as commuters leave work earlier or later to avoid the congestion.

SR 37. Under future conditions, PM peak-hour demand on SR 37, assuming its widening to 4 freeway lanes east of Mare Island, would exceed capacity in the eastbound direction immediately east of the island. Immediately west of the island, PM peak-hour eastbound and westbound traffic demand would exceed capacity. Continued congestion along SR 37 would increase the duration of the peak period as commuters leave work earlier or later to avoid the commute hour congestion.

Local Access Circulation System Operation

As shown in Figure 4-1, year 2020 projected volumes at all analyzed locations on local access roadways would not exceed capacities. The local funded improvements shown in Table 4-16 for Wilson Avenue, the Wilson Avenue/Mare Island Causeway intersection, and Tennessee Street are assumed to be in place by 2020.

4.9.3 Reuse Plan Alternative

Assumptions and Methodology

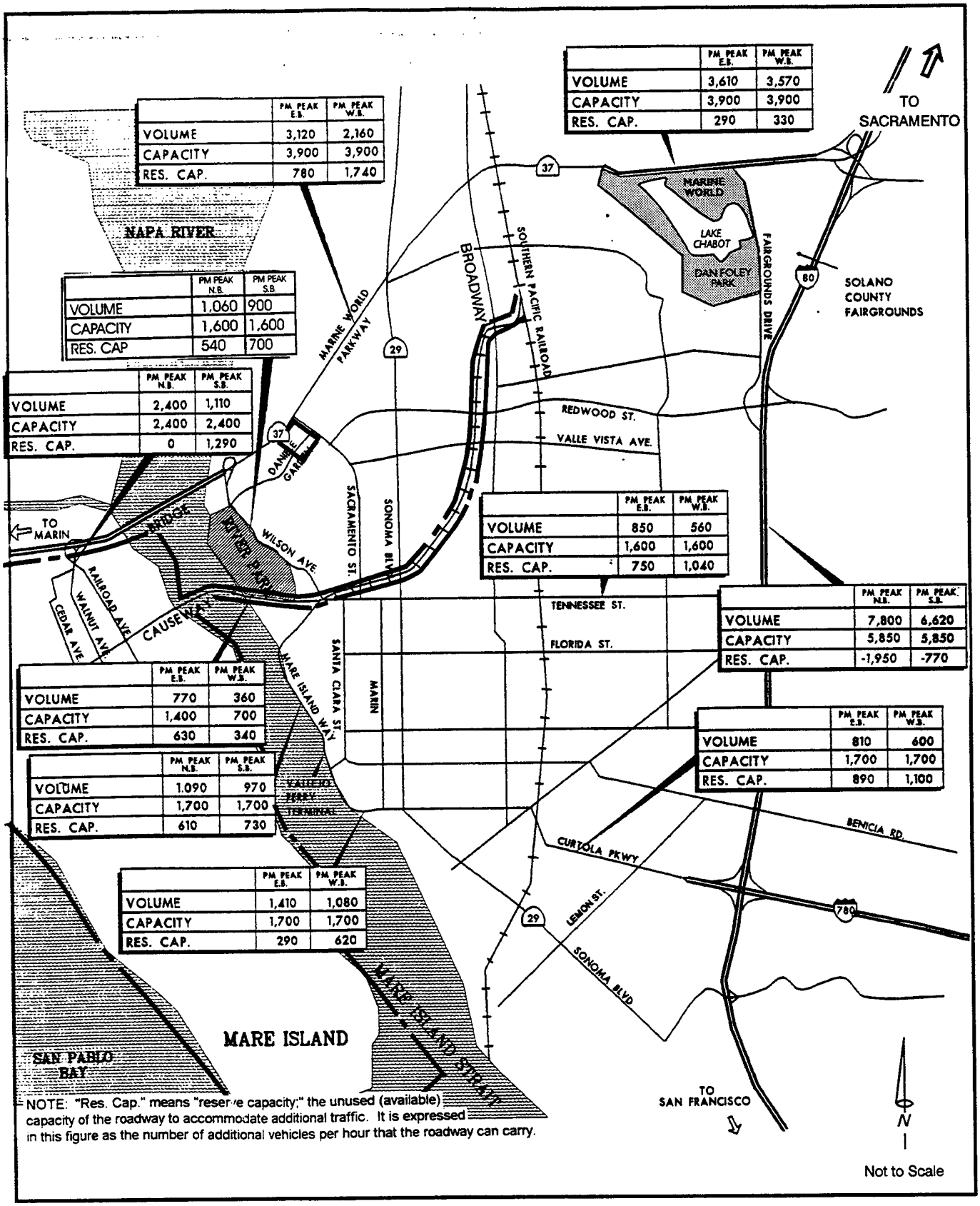
Under the Reuse Plan Alternative, Mare Island would be developed under a variety of land uses. Year 2020 trip generation and distribution from developing the reuse plan have been projected based on the following assumptions and methodology. Figure 4-2 indicates the reserve capacity available under the Reuse Plan Alternative.

Roadway Improvements

The off-island roadway improvements in Vallejo indicated in Table 4-16 are assumed to be in place at buildout of the Reuse Plan Alternative.

Trip Generation

Table 4-17 shows the trip generation rates applied to the range of land uses that could be developed under the Reuse Plan Alternative. This table also provides a comparison of trip generation rates used in the Vallejo traffic model and



	PM PEAK E.B.	PM PEAK W.B.
VOLUME	3,120	2,160
CAPACITY	3,900	3,900
RES. CAP.	780	1,740

	PM PEAK E.B.	PM PEAK W.B.
VOLUME	3,610	3,570
CAPACITY	3,900	3,900
RES. CAP.	290	330

	PM PEAK N.B.	PM PEAK S.B.
VOLUME	1,060	900
CAPACITY	1,600	1,600
RES. CAP	540	700

	PM PEAK N.B.	PM PEAK S.B.
VOLUME	2,400	1,110
CAPACITY	2,400	2,400
RES. CAP.	0	1,290

	PM PEAK E.B.	PM PEAK W.B.
VOLUME	850	560
CAPACITY	1,600	1,600
RES. CAP.	750	1,040

	PM PEAK N.B.	PM PEAK S.B.
VOLUME	7,800	6,620
CAPACITY	5,850	5,850
RES. CAP.	-1,950	-770

	PM PEAK E.B.	PM PEAK W.B.
VOLUME	770	360
CAPACITY	1,400	700
RES. CAP.	630	340

	PM PEAK E.B.	PM PEAK W.B.
VOLUME	810	600
CAPACITY	1,700	1,700
RES. CAP.	890	1,100

	PM PEAK N.B.	PM PEAK S.B.
VOLUME	1,090	970
CAPACITY	1,700	1,700
RES. CAP.	610	730

	PM PEAK E.B.	PM PEAK W.B.
VOLUME	1,410	1,080
CAPACITY	1,700	1,700
RES. CAP.	290	620

NOTE: "Res. Cap." means "reserve capacity;" the unused (available) capacity of the roadway to accommodate additional traffic. It is expressed in this figure as the number of additional vehicles per hour that the roadway can carry.

Roadway traffic volumes and capacities define roadway operation.

LEGEND:

Mare Island Naval Shipyard Property Boundaries (excluding submerged land)

Source: City of Vallejo, 1994c

Reuse Plan Alternative: Peak Hour Reserve Capacity for Primary Access Routes

Mare Island, California

Figure 4-2

standard rates from the Institute of Transportation Engineers, Trip Generation, 1991, as amended, for each on-island land use. Table 4-18 shows the projected PM peak-hour trip generation for the Reuse Plan Alternative.

TABLE 4-17
TRIP GENERATION RATES
(PM Peak Hour)

Land Use	Units	ITE Rate	Vallejo Traffic Model Rates
Residential	DUS	1.01	0.74
Recreation			
Golf	acres	0.39	N/A[1]
Open Space	acres	1.2	3.5
Education/Office	KSF	2.24	2.54
Office	KSF	2.24	2.54
Retail Commercial	KSF	7.6	4.76
Light Industry	KSF	0.98	0.91
Heavy Industry	KSF	0.19	0.91
Civic	KSF	2.24	2.54
Warehouse	KSF	0.74	0.82
RV Park	spaces	0.56	N/A
Dormitory	beds	0.34	N/A

Source: Vallejo 1994c

[1] According to the Reuse Plan Traffic Study, the Vallejo model in some cases had rates that were too high or that did not relate to specific land uses proposed for Mare Island. For these cases, the Vallejo land use input was adjusted to provide more reasonable trip generation estimates. For example, the city's trip generation rates for parks were substantially higher than ITE rates. Adjustments were made by calculating trip generation using the ITE rates and then sizing the land use accordingly.

Trip Reduction— Travel Demand Management

Land use trip generation projections for the Reuse Plan Alternative were factored to account for new residents expected to both live and work on the island, use of travel modes other than the automobile, and use of other travel demand management (TDM) measures that might reduce commute trips. These could involve flexible working hours (resulting in off-peak commute trips), telecommuting, carpooling, and using transit. For the Reuse Plan Alternative, total expected trips were reduced about 20 percent to account for potential TDM measures. TDM credit also was incorporated into Vallejo's trip generation data for its 1994 Citywide Traffic Study, which forms the basis for the off-island (Vallejo) analysis.

TABLE 4-18
MARE ISLAND PM PEAK TRIP GENERATION PROJECTIONS

Areas of Development	Reuse Plan Alternative			Medium Density Alternative			Open Space Alternative		
	Quantity	Units	PM Peak Trips	Quantity	Units	PM Peak Trips	Quantity	Units	PM Peak Trips
On-Island Residential	1486	DU	1500	696	DU	703	543	DUS	548
Golf Course	172	acres	67	172	acres	67	0	acres	0
Regional Park	161	acres	196	163	acres	196	161	acres	196
Developed Recreation.	48	acres	17	48	acres	17	0	acres	0
Education/Office	457.5	KSF	1025	457.5	KSF	1025	457.5	KSF	1025
Office	835.9	KSF	1872	529.6	KSF	1186	452.3	KSF	1013
Retail	175.7	KSF	1373	120.7	KSF	917	120.7	KSF	917
Light Industry	2063.2	KSF	2022	484	KSF	474	484	KSF	474
Heavy Industry	934.3	KSF	178	805.4	KSF	153	700	KSF	133
Civic	181.7	KSF	407	181.7	KSF	407	118.3	KSF	265
Warehouse	1285.1	KSF	951	663.1	KSF	491	663.1	KSF	491
Dormitory	602	beds	205	602	beds	205	557	beds	189
TOTAL			9813			5841			5251

Source: Vallejo 1994c, as amended by Crane Transportation Group

Note: Developed Recreation includes Reuse Area 7 that proposes recreation developments under the Reuse Plan Alternative and Medium Density Alternative.
The No Action Alternative consists of an estimated 80 maintenance and remediation employees, resulting in an estimated 59 (2-way) PM peak-hour trips. The same number of employees are estimated to be present under the closed base scenario, resulting in the same estimated number of peak-hour trips.
Trip generation estimates were factored to account for the island's jobs/housing balance and for trip reduction related to mode split and TDM measures, such as flexible working hours and telecommuting.

KSF = 1,000 square feet

DU = dwelling units

Trip Distribution

Off-island trips generated by the Reuse Plan Alternative were assigned by the city's traffic model to the primary access roadway system. Total PM peak-hour traffic entering and leaving the island is shown on Figure 4-2. Table 4-18 indicates the trip generation of the Reuse Plan Alternative by land use. PM peak-hour traffic volumes entering and leaving the island under the Reuse Plan Alternative would be approximately 7,590 vehicles per hour (VPH), or slightly over 50 percent higher than preclosure traffic conditions (Table 4-19). Part of the island traffic associated with the Reuse Plan Alternative would result from constructing the southern crossing that would enable vehicles to travel between SR 37 and southern Vallejo using the island roadway system.

TABLE 4-19
MARE ISLAND ENTRANCE PM PEAK-HOUR VOLUME COMPARISON

Scenario	Inbound	Outbound	Total (2-way Volume)
Preclosure Shipyard Operation	1425	3510	4935
Reuse Plan Alternative	2585	5005	7590
Medium Density Alternative	1420	3000	4420
Open Space Alternative	1235	2750	3985
No Action Alternative	12	48	60

Source: Vallejo 1994c, as amended by Crane Transportation Group

Southern Crossing

The Reuse Plan Alternative would incorporate a new bridge connection to Mare Island, known as the southern crossing, that would connect Vallejo with the southern end of Mare Island. This planned southern access to the island was determined to be necessary to accommodate traffic generated under this alternative. The size and possible location for the crossing would be the subject of a future Vallejo/Caltrans planning study and site-specific environmental analysis. Extensive consultation and coordination with environmental and permitting agencies would be required prior to implementation of this proposal as indicated in Chapter 2 of this document.

Both the North Gate and Main Entrance roads would exceed capacity at full reuse buildout without the southern crossing bridge. For this analysis, it is assumed that the southern crossing would have 6 lanes. Its precise location in the southern part of the island and connection to the Vallejo street system has not yet been determined.

Regional Access Circulation System Impacts

Nonsignificant Impacts

- The Reuse Plan Alternative would generate fewer average daily trips than under preclosure shipyard conditions. An estimated 60,224 average daily trips would be generated under this alternative as compared to an estimated 76,350 average daily trips under preclosure shipyard conditions (see Section 4.10, Table 4-22). These trips would contribute to regionally-induced congestion on SR 37 and I-80 in 2020. This would not be significant in the context of the regionally induced congestion that would occur with no contributions of traffic from Mare Island. Traffic generated by the Reuse Plan Alternative would add incrementally to regionally significant congestion on SR 37 and I-80. No mitigation is required.

Local Access Roadway Impacts

Nonsignificant Impacts

- The Reuse Plan Alternative would add traffic to the local off-island roadway network. This impact would not be significant. With funded improvements and construction of the southern crossing, volumes on the analyzed local access routes would not exceed capacity under the Reuse Plan Alternative (Figure 4-2). As shown in Table 4-16, Wilson Avenue, the Wilson Avenue/Tennessee Street/Mare Island Causeway intersection, and Tennessee Street are scheduled for fully funded improvements. These improvements primarily represent ultimate configurations, given constraints, such as existing land uses and right-of-way costs (Vallejo 1994c). No mitigation is required.

Mare Island Access Routes

Nonsignificant Impacts

- *Mare Island Causeway.* The Reuse Plan Alternative would generate traffic on Mare Island Causeway. Because these projected volumes would not exceed capacity, this impact would not be significant. As shown in Figure 4-2, the PM peak-hour roadway capacity at the Mare Island Causeway access would be 1,400 VPH (2 lanes) eastbound and 700 VPH (1 lane) westbound. (This assumes use of the reversible middle lane during peak hours.) The 3 lanes on Mare Island Causeway and at the North Gate are striped for reversible use during peak hours. As a result, there can be as many as 4 one-direction lanes entering or exiting the island at one time, including both the North Gate and Main Entrance. As shown, this

capacity would be sufficient under buildout conditions. Appendix Figure G-2 illustrates G Street improvements, and Appendix Figure G-3 illustrates the planned Wilson Avenue/Mare Island Causeway intersection configuration and recommended roadway improvements. Vallejo plans to reconfigure the Wilson Avenue/Mare Island Causeway/Tennessee Street intersection in the near future to increase capacity and efficiency. No mitigation is required.

- *Causeway Drawbridge.* Raising of the Causeway drawbridge during the PM peak period to allow vessel traffic to pass under the bridge could cause queuing at the bridge and congestion along access routes to the bridge. Traffic would most likely use alternate routes when the bridge was raised, which would increase traffic along the southern crossing and north access routes. This increase would not exceed the capacities of these roadways, and this impact would therefore be adverse but not significant. No mitigation is required, but it is recommended that TDM measures be implemented under reuse. These measures could include carpooling incentives and flexible work schedules to reduce the number of vehicles traveling during the PM peak period.

- *North Gate Access.* Peak-hour traffic generated under the Reuse Plan Alternative could be accommodated by the capacity of the North Gate road (3 inbound lanes and 3 outbound lanes and related improvements, as shown on Appendix Figure G-4). This impact would not be significant, and no mitigation is required.

- *North Gate Access Ramp.* The planned 3 outbound lanes would merge from 3 to 2 outbound lanes at the SR 37 ramp immediately north of the existing gate area because of the restriction of the SR 37 eastbound on-ramp to 1 lane. The SR 37 ramp is under Caltrans jurisdiction, and this impact is considered a limitation of the regional roadway system, not mitigable by Federal or local authority. The inadequacy of the ramp to accommodate outbound traffic volumes likely would result in rerouting trips to the Mare Island Causeway access or southern crossing. At buildout, the increased traffic could result in instituting aggressive measures, such as mandating flex-time for island employees to reduce the outbound traffic delay at this location.

- *Southern Crossing.* Constructing the southern crossing bridge would alleviate congestion at the 2 access points to the island. This would be a beneficial impact to on-island access and egress. Impacts to off-island traffic would be dependent upon the location and design of the bridge. Should traffic flow be improved by providing a regional bypass to local streets and roadways, it would be a beneficial impact. Construction of the southern

crossing would be subject to further project-specific analysis, environmental documentation and subsequent permitting processes.

Parking Impacts

Nonsignificant Impacts

- Implementing the Reuse Plan Alternative would generate a demand for 8,955 parking spaces that would be met by the projected parking supply. Although approximately 1,997 parking spaces would be removed to make way for anticipated construction, approximately 2,460 new spaces would be added providing a total of 8,957 parking spaces (Table 4-20). This impact would therefore not be significant, and no mitigation is required.

TABLE 4-20
PARKING IMPACT SUMMARY

Reuse Plan Alternative	Parking Demand (No. of Spaces)	Parking Supply (No. of Spaces)
Reuse Plan Alternative	8,955	8,957[1]
Medium Density Alternative	4,760	8,494
Open Space Alternative	4,285	8,494

Source: Vallejo 1994c, as amended by Crane Transportation Group
Notes: [1]Under the Reuse Plan Alternative a net increase of 463 parking spaces would occur.

Truck Freight System Impacts

Impact 1. A significant and mitigable impact to local roadways would result from the increase in truck traffic. The proposed mix of light industrial, warehouse, and heavy industrial uses proposed under the Reuse Plan Alternative could produce truck activity that would impact peak commute traffic on Mare Island access roadways and the Vallejo arterial roadway network off-island.

Mitigation 1. Monitor truck activity. If truck activity is causing significant impacts to off-island or island access roadways during commute periods, limit or restrict truck activity during these periods. Implementing this mitigation would reduce the impact to a nonsignificant level.

Impact 2. A significant and mitigable impact would be safety hazards created by increased truck traffic on Mare Island internal roadways. Many internal Mare Island roadways are not designed to accommodate truck traffic that would be generated by reuse. The street widths and turning radii are not sufficient, which would require trucks to use 2 lanes for turning at

intersections or driveways. This would create safety hazards for other vehicles using these roadways and substantial operational restrictions on truck traffic.

Mitigation 2. Modify on-island intersections to Vallejo industrial street standards. Construct all new roadways or widen all existing roadways adjacent to activities generating truck traffic to Vallejo street standards to allow safe turn movements at driveways. Construct all new driveways or reconstruct all existing driveways (as needed) to be used for truck access to Vallejo street standards. Widen or construct all roadways between the Mare Island access locations and the industrial/warehousing facilities that are regularly used by trucks to conform to Vallejo street standards. Implementing this mitigation would reduce the impact to a nonsignificant level.

Impact 3. A significant and mitigable impact would be safety hazards resulting from truck loading and unloading movements on Mare Island. The designs of some existing truck loading bays require truck maneuvers that disrupt traffic flow thereby affecting the safety and flow of traffic on adjacent streets.

Mitigation 3. Reposition loading bays, as needed, to prevent trucks from disrupting the flow of traffic on Mare Island streets. Implementing this mitigation would reduce the impact to a nonsignificant level.

Rail Freight System Impacts

Impact 4. A significant and mitigable impact would be safety and operational hazards resulting from new rail use on the island or to and from the island via Mare Island Causeway. The existing rail system at Mare Island could provide service to proposed industrial and warehouse activities. Use of the rail line in the center lane of the Mare Island Causeway bridge would produce operational concerns for traffic flow, unless trains were restricted during peak traffic periods.

Mitigation 4. Protect all Mare Island railroad-related at-grade railroad crossings on and off the island with the appropriate combination of gates and flashing lights. Close the Mare Island Causeway bridge to auto or truck traffic when being used by a train. Restrict trains during peak traffic periods. Implementing this mitigation would reduce the impact to a nonsignificant level.

Aviation System Impacts

Nonsignificant Impacts

- The helicopter landing areas could be used under the Reuse Plan Alternative. The existing landing facilities are open areas that can accommodate landings but are not formalized, and reuse could create a safety and security risk. This would not be a significant impact because future use of helipads by private operators would require military and Federal Aviation Administration (FAA) approvals, construction of requisite improvements, and implementation of standard safety procedures. No mitigation is required.

Construction Traffic Impacts

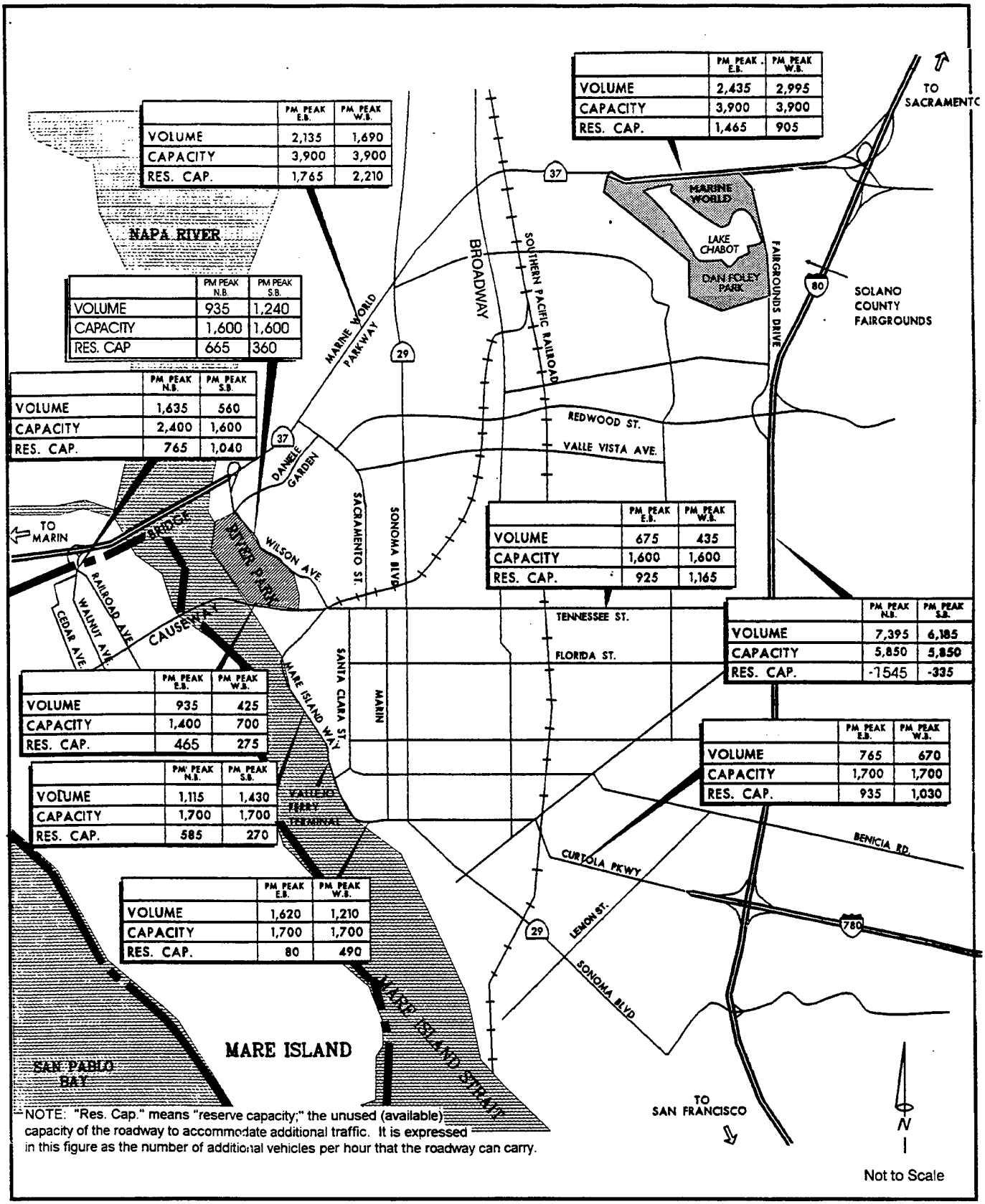
Impact 5. A temporary significant and mitigable impact would result from the increased peak period construction traffic volumes on Vallejo and Mare Island street systems. The resultant automobile and truck volumes from workers associated with on-island construction, demolition, and cleanup activities could affect peak and off-peak traffic periods and on-island and off-island street systems. The amount of construction-related traffic would correspond to the extent of reuse land development underway at any one time.

Mitigation 5. Monitor construction, demolition, and remediation traffic volumes and restrict activity to off-peak traffic periods, as appropriate. Implementing this mitigation would reduce the impact to a nonsignificant level.

4.9.4 Medium Density Alternative

Assumptions and Methodology

Year 2020 trip generation and distribution from development of the Medium Density Alternative have been projected assuming that the southern crossing would not be a part of the circulation system. For this alternative, access to Mare Island would be via the Mare Island Causeway and the North Access to and from SR 37. The off-island roadway improvements in Vallejo (Table 4-16) are assumed to be in place at buildout of the Medium Density Alternative. Figure 4-3 shows the reserve capacities for primary access routes under the Medium Density Alternative.



	PM PEAK E.B.	PM PEAK W.B.
VOLUME	2,135	1,690
CAPACITY	3,900	3,900
RES. CAP.	1,765	2,210

	PM PEAK E.B.	PM PEAK W.B.
VOLUME	2,435	2,995
CAPACITY	3,900	3,900
RES. CAP.	1,465	905

	PM PEAK N.B.	PM PEAK S.B.
VOLUME	935	1,240
CAPACITY	1,600	1,600
RES. CAP	665	360

	PM PEAK N.B.	PM PEAK S.B.
VOLUME	1,635	560
CAPACITY	2,400	1,600
RES. CAP.	765	1,040

	PM PEAK E.B.	PM PEAK W.B.
VOLUME	675	435
CAPACITY	1,600	1,600
RES. CAP.	925	1,165

	PM PEAK N.B.	PM PEAK S.B.
VOLUME	7,395	6,185
CAPACITY	5,850	5,850
RES. CAP.	-1545	-335

	PM PEAK E.B.	PM PEAK W.B.
VOLUME	935	425
CAPACITY	1,400	700
RES. CAP.	465	275

	PM PEAK E.B.	PM PEAK W.B.
VOLUME	765	670
CAPACITY	1,700	1,700
RES. CAP.	935	1,030

	PM PEAK N.B.	PM PEAK S.B.
VOLUME	1,115	1,430
CAPACITY	1,700	1,700
RES. CAP.	585	270

	PM PEAK E.B.	PM PEAK W.B.
VOLUME	1,620	1,210
CAPACITY	1,700	1,700
RES. CAP.	80	490

NOTE: "Res. Cap." means "reserve capacity;" the unused (available) capacity of the roadway to accommodate additional traffic. It is expressed in this figure as the number of additional vehicles per hour that the roadway can carry.

Roadway volumes and capacities define roadway operation.

LEGEND:

Mare Island Naval Shipyard Property Boundaries (excluding submerged land)

Source: City of Vallejo, 1994c

Medium Density Alternative: Peak Hour Reserve Capacity for Primary Access Routes

Mare Island, California

Figure 4-3

Trip Generation

Table 4-17 indicates the trip generation rates for land uses that could be developed under the reuse alternatives. Trip generation from the Medium Density Alternative is shown on Table 4-18. The major difference between the Medium Density Alternative and the Reuse Plan Alternative affecting trip generation is the absence of new building construction, absence of the Retail/Residential Area (Reuse Area 10), and overall reduced development densities.

Trip Reduction— Travel Demand Management

Trip generation projections for the Medium Density Alternative reuse were factored to account for TDM measures that would be used to reduce trips. Total trips were reduced about 10 percent under this alternative to account for effective TDM measures at this level of development and reuse.

Trip Distribution

Off-island trips were assigned by the Vallejo traffic model to the primary access roadway system, with improvements as described in Table 4-16. The total volume of PM peak-hour traffic entering and leaving the island is shown on Table 4-19. As shown in Table 4-19 the Medium Density Alternative would generate less (2-way) trips at the entrances to the island than occurred under preclosure conditions.

Regional Access Circulation System Impacts

Nonsignificant Impacts

- Reuse under the Medium Density Alternative would generate fewer average daily trips than preclosure conditions. An estimated 35,100 average daily trips would be generated under this alternative, approximately half the number of vehicle trips generated under preclosure shipyard conditions. These trips would contribute to regionally-induced congestion on SR 37 and I-80. This would not be considered significant in the context of the regionally-induced congestion with no contributions of traffic from Mare Island. The traffic generated from this alternative would, however, add incrementally to the regionally significant congestion on SR 37 and I-80. No mitigation is required.

Local Access Roadway Impacts

Nonsignificant Impacts

- The Medium Density Alternative would generate traffic on the local access roadways. This impact would not be significant. With funded improvements in place, volumes on the local access roadways analyzed would not exceed capacity during the PM peak hour. The local funded improvements shown in Table 4-16 for Wilson Avenue, the Wilson Avenue/Mare Island Causeway intersection, and Tennessee Street would be assumed to be in place for the Medium Density Alternative. No mitigation is required.

Mare Island Access Routes

Nonsignificant Impacts

- *Mare Island Causeway.* The Medium Density Alternative would generate traffic on the causeway, but these volumes would not exceed the causeway's capacity and therefore would not be significant. As shown in Figure 4-3, the PM peak-hour roadway capacity at the Mare Island Causeway access would remain at 1,400 VPH (2 lanes) eastbound and 700 VPH (1 lane) westbound. This capacity would be sufficient to accommodate traffic generated by this alternative, and the center lane would continue to be reversible to accommodate peak direction traffic. Appendix Figure G-3 illustrates the planned Wilson Avenue/Mare Island Causeway intersection configuration and recommended roadway improvements. Note that the Mare Island Causeway access intersection at Wilson Avenue/Mare Island Causeway/Tennessee Avenue would be reconfigured in the future to increase capacity and efficiency. No mitigation is required.

- *Causeway Drawbridge.* Raising of the Causeway drawbridge during the PM peak period to allow vessel traffic to pass under the bridge could cause queuing at the bridge and congestion along access routes to the bridge, as described under the Reuse Plan Alternative. This increase would not exceed the capacities of these roadways, and this impact would therefore be adverse but not significant. No mitigation is required, but recommended TDM measures would be the same as under the Reuse Plan Alternative.

- *North Gate Access Ramp.* Peak-hour traffic generated under this alternative could be accommodated by the on-island capacity provided at the North Access road (3 inbound and 3 outbound lanes and related improvements,

as shown on Figure G-4). This impact would not be significant, and no mitigation is required.

- *North Gate Access.* The planned 3 outbound lanes would merge from 3 to 2 outbound lanes required immediately north of the existing gate area. This would be required because of the state imposed restriction of the SR 37 eastbound on-ramp to 1 lane. This is considered a limitation of the regional roadway systems and not mitigable by the Federal or local authority. The inadequacy of the ramp to accommodate outbound traffic volumes likely would result in rerouting trips to the causeway access and at buildout could result in aggressive measures, such as mandated flex-time for employees of businesses on the island to avoid the outbound delays at this location. No mitigation is required.

Parking Impacts

Nonsignificant Impacts

- Implementing this alternative would generate a demand for 4,760 spaces, which would be met by the available supply. This impact would not be significant. No mitigation is required.

Truck Freight System Impacts

Impact 1. A significant and mitigable impact would be the increased peak commute traffic on Mare Island access roadways, as described for the Reuse Plan Alternative.

Mitigation 1. Same as for the Reuse Plan Alternative.

Impact 2. A significant and mitigable impact would be the safety hazards created by increased truck traffic on Mare Island internal roadways. Many internal Mare Island roadways are not designed to accommodate truck traffic that would be generated by reuse, creating safety hazards, as under the Reuse Plan Alternative.

Mitigation 2. Same as for the Reuse Plan Alternative.

Impact 3. A significant and mitigable impact would be safety hazards resulting from truck loading and unloading movements on Mare Island, as under the Reuse Plan Alternative.

Mitigation 3. Same as for the Reuse Plan Alternative.

Rail Freight System Impacts

Impact 4. A significant and mitigable impact would be safety and operational hazards resulting from new rail use on the island or to and from the island via Mare Island Causeway, as under the Reuse Plan Alternative.

Mitigation 4. Same as for the Reuse Plan Alternative.

Aviation System Impacts

Nonsignificant Impacts

- Potential safety concerns of reusing the helicopter landing areas would be mitigated by conforming with FAA requirements, as described under the Reuse Plan Alternative. No further mitigation is required.

Construction Traffic Impacts

Impact 5. A temporary significant and mitigable impact would result from the increased peak period construction traffic volumes on Vallejo and Mare Island street systems, as under the Reuse Plan Alternative.

Mitigation 5. Same as for the Reuse Plan Alternative.

4.9.5 Open Space Alternative

Assumptions and Methodology

Year 2020 trip generation and distribution from developing the Medium Density Alternative have been projected based on the following assumptions and methodology. As with the Medium Density Alternative, the southern crossing is not a part of the circulation system for the Open Space Alternative. For this alternative, access to Mare Island would be via the Mare Island Causeway and the North Access to and from SR 37. The off-island roadway improvements in Vallejo (Table 4-16) are assumed to be in place at buildout of the Open Space Alternative. Figure 4-4 shows the reserve capacities for primary access routes under the Open Space Alternative.

Trip Generation

Trip generation from the Open Space Alternative is shown on Table 4-18. The major difference between the Open Space Alternative and the Reuse Plan Alternative affecting trip generation is the absence of new building construction, absence of development of the Retail/Residential Area (Reuse

Area 10), and reduced densities (less than the Medium Density Alternative) in Reuse Areas 2, 3, and 5.

Trip Reduction— Travel Demand Management

Trip generation projections were factored to account for TDM measures that would be used to reduce trips. Total trips were reduced about 10 percent under this alternative to account for effective TDM measures at this level of development and reuse.

Trip Distribution

Off-island trips were assigned by the Vallejo traffic model to the primary access roadway system, with improvements described in Table 4-16. As shown in Table 4-19, the Open Space Alternative would generate less peak-hour (2-way) trips at the entrances to the island than occurred under preclosure conditions. The total volume of PM peak-hour traffic entering and leaving the island is shown on Figure 4-4.

Regional Access Circulation System Impacts

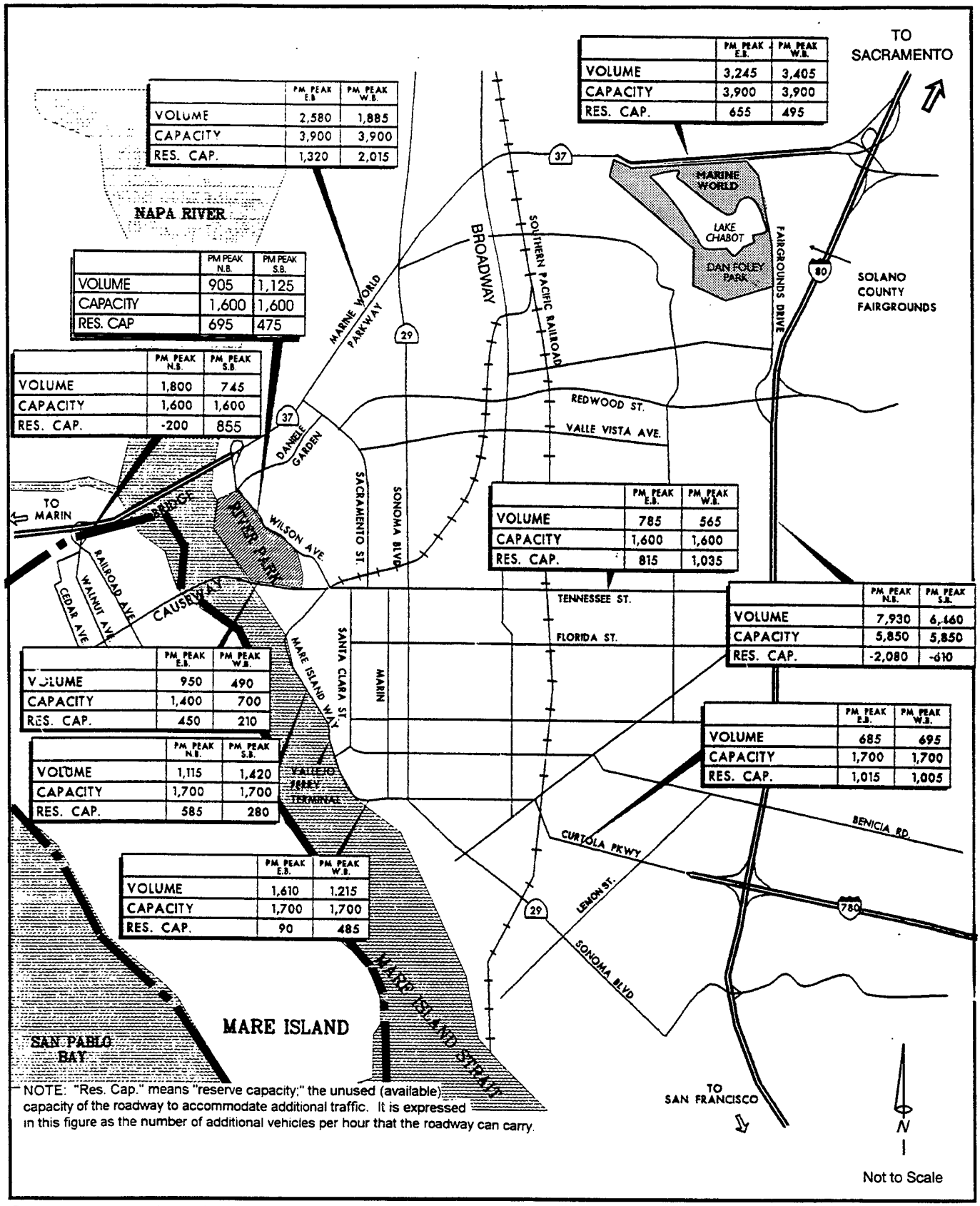
Nonsignificant Impacts

- Reuse under the Open Space Alternative would generate fewer average daily trips than preclosure conditions. An estimated 31,095 average daily trips would be generated under this alternative, less than half the number of vehicle trips generated under preclosure shipyard conditions. These trips would contribute to regionally-induced congestion on SR 37 and I-80. This would not be significant in the context of the regionally-induced congestion that would occur with no contributions of traffic from Mare Island. The traffic generated from this alternative would, however, add incrementally to the regionally significant congestion SR 37 and I-80. No mitigation is required.

Local Access Roadway Impacts

Nonsignificant Impacts

- Under the Open Space Alternative, traffic would be generated on the local access roadways located off-island. This impact would not be significant. With the funded improvements in place, no local access roadway analyzed would exceed capacity during the PM peak hour. The local funded improvements shown in Table 4-16 for Wilson Avenue, the Wilson



	PM PEAK E.B.	PM PEAK W.B.
VOLUME	2,580	1,885
CAPACITY	3,900	3,900
RES. CAP.	1,320	2,015

	PM PEAK E.B.	PM PEAK W.B.
VOLUME	3,245	3,405
CAPACITY	3,900	3,900
RES. CAP.	655	495

	PM PEAK N.B.	PM PEAK S.B.
VOLUME	905	1,125
CAPACITY	1,600	1,600
RES. CAP	695	475

	PM PEAK N.B.	PM PEAK S.B.
VOLUME	1,800	745
CAPACITY	1,600	1,600
RES. CAP.	-200	855

	PM PEAK E.B.	PM PEAK W.B.
VOLUME	785	565
CAPACITY	1,600	1,600
RES. CAP.	815	1,035

	PM PEAK N.B.	PM PEAK S.B.
VOLUME	7,930	6,460
CAPACITY	5,850	5,850
RES. CAP.	-2,080	-610

	PM PEAK E.B.	PM PEAK W.B.
VOLUME	950	490
CAPACITY	1,400	700
RES. CAP.	450	210

	PM PEAK E.B.	PM PEAK W.B.
VOLUME	685	695
CAPACITY	1,700	1,700
RES. CAP.	1,015	1,005

	PM PEAK N.B.	PM PEAK S.B.
VOLUME	1,115	1,420
CAPACITY	1,700	1,700
RES. CAP.	585	280

	PM PEAK E.B.	PM PEAK W.B.
VOLUME	1,610	1,215
CAPACITY	1,700	1,700
RES. CAP.	90	485

Roadway volumes and capacities define roadway operation.

LEGEND:

Mare Island Naval Shipyard Property Boundaries (excluding submerged land)

Source: City of Vallejo, 1994c

Open Space Alternative: Peak Hour Reserve Capacity for Primary Access Routes

Mare Island, California

Figure 4-4

Avenue/Mare Island Causeway intersection, and Tennessee Street also are assumed to be in place for the Open Space Alternative. No mitigation is required.

Mare Island Access Route Impacts

Nonsignificant Impacts

Mare Island Causeway. The Open Space Alternative would generate traffic on the causeway. Because these volumes would not exceed capacity, this impact would not be significant. As shown in Figure 4-4, the PM peak-hour roadway capacity at the Mare Island Causeway access would remain at 1,400 VPH (2 lanes) eastbound and 700 VPH (1 lane) westbound. This capacity would be sufficient under buildout conditions, and the center lane would continue to be reversible to accommodate peak direction traffic. Appendix Figure G-3 illustrates the planned Wilson Avenue/Mare Island Causeway intersection configuration and recommended roadway improvements. The Mare Island Causeway access intersection at Wilson Avenue/Mare Island Causeway/Tennessee Avenue would be reconfigured in the future to increase capacity and efficiency. No mitigation is required.

- *Causeway Drawbridge.* Raising the Causeway drawbridge during the PM peak period to allow vessel traffic to pass under the bridge could cause queuing at the bridge and congestion along access routes to the bridge, as described under the Reuse Plan Alternative. This increase would not exceed the capacities of these roadways, and this impact would therefore be adverse but not significant. No mitigation is required, and recommended measures are the same as for the Reuse Plan Alternative.

- *North Gate Access.* Peak-hour traffic generated under this reuse alternative could be accommodated by the on-island capacity provided at the North Gate road (3 inbound and 3 outbound lanes and related improvements, as shown on Figure G-4). This impact would not be significant, and no mitigation is required.

- *North Gate Access Ramp.* The planned 3 outbound lanes would not improve the operation of the SR 37 eastbound on-ramp because merging from 3 to 2 outbound lanes is required immediately north of the existing gate area. This is due to restricting the SR 37 eastbound on-ramp to 1 lane. Because it is imposed by Caltrans, this restriction is considered a limitation of the regional roadway system, and being under Caltrans jurisdiction, is not mitigable by Federal or local authority. The inadequacy of the ramp to accommodate outbound traffic volumes likely would result in rerouting trips to the causeway access. At buildout, the

situation could result in aggressive measures, such as mandating flex-time for island employees to avoid the outbound delays at this location. No mitigation is required.

Parking Impacts

Nonsignificant Impacts

- Implementing this reuse alternative would generate a demand for about 4,285 spaces, which would be accommodated by the available supply. This impact would not be significant, and no mitigation is required.

Truck Freight System Impacts

Impact 1. A significant and mitigable impact would be the increased peak commute traffic on Mare Island access roadways, as described for the Reuse Plan Alternative.

Mitigation 1. Same as for the Reuse Plan Alternative.

Impact 2. A significant and mitigable impact would be the safety hazards created by increased truck traffic on Mare Island internal roadways. Many internal Mare Island roadways are not designed to accommodate truck traffic that would be generated by reuse, creating safety hazards, as under the Reuse Plan Alternative.

Mitigation 2. Same as for the Reuse Plan Alternative.

Impact 3. A significant and mitigable impact would be safety hazards resulting from truck loading and unloading movements on Mare Island, as under the Reuse Plan Alternative.

Mitigation 3. Same as for the Reuse Plan Alternative.

Rail Freight System Impacts

Impact 4. A significant and mitigable impact would be safety and operational hazards resulting from new rail use on the island or to and from the island via Mare Island Causeway, as under the Reuse Plan Alternative.

Mitigation 4. Same as for the Reuse Plan Alternative.

Aviation System Impacts

Nonsignificant Impacts

- Potential safety concerns through reuse of the landing areas would be mitigated by complying with FAA regulations, as described under the Reuse Plan Alternative. No mitigation is required.

Construction Traffic Impacts

Impact 5. A temporary significant and mitigable impact would result from the increased peak period construction traffic volumes on Vallejo and Mare Island street systems, as under the Reuse Plan Alternative.

Mitigation 5. Same as for the Reuse Plan Alternative.

4.9.6 No Action Alternative

Assumptions and Methodology

Year 2020 trip generation and distribution under the No Action Alternative have been projected based on the following assumptions and methodology. Under this alternative, much of the shipyard would be under caretaker status, with security, maintenance, and remediation activities occupying the surplus land on the base. No rail freight activity, helicopter landings, or construction activity is assumed under this alternative, and there would therefore be no impacts in these areas. Figure 4-5 shows the reserve capacities for primary access routes under the No Action Alternative.

Roadway Improvements

The off-island roadway improvements in Vallejo (Table 4-16) are assumed to be in place by the year 2020.

Trip Generation

The 80 workers on the island for caretaker functions would result in a projected total of 12 inbound and 48 outbound PM peak-hour trips.

Trip Distribution

Off-island trips were assigned by the Vallejo traffic model to the primary access roadway system, with improvements as described in Table 4-16. Total PM peak-hour traffic entering and leaving the island is shown in Figure 4-5.

As shown on Table 4-19, the No Action Alternative would generate 60 2-way trips at the entrances to the island, substantially less than preclosure conditions.

Trip Reduction

No trip reduction is assumed for this alternative.

Regional Access Circulation System Impacts

Nonsignificant Impacts

- Regional off-island transportation conditions under this alternative would not be significant, as described for the Reuse Plan Alternative; they are considered to be regionally induced traffic conditions. An estimated 2,404 average daily trips would be generated under this alternative, which would not substantially contribute to regional traffic increases. No mitigation is required.

Local Access Roadway Impacts

Nonsignificant Impacts

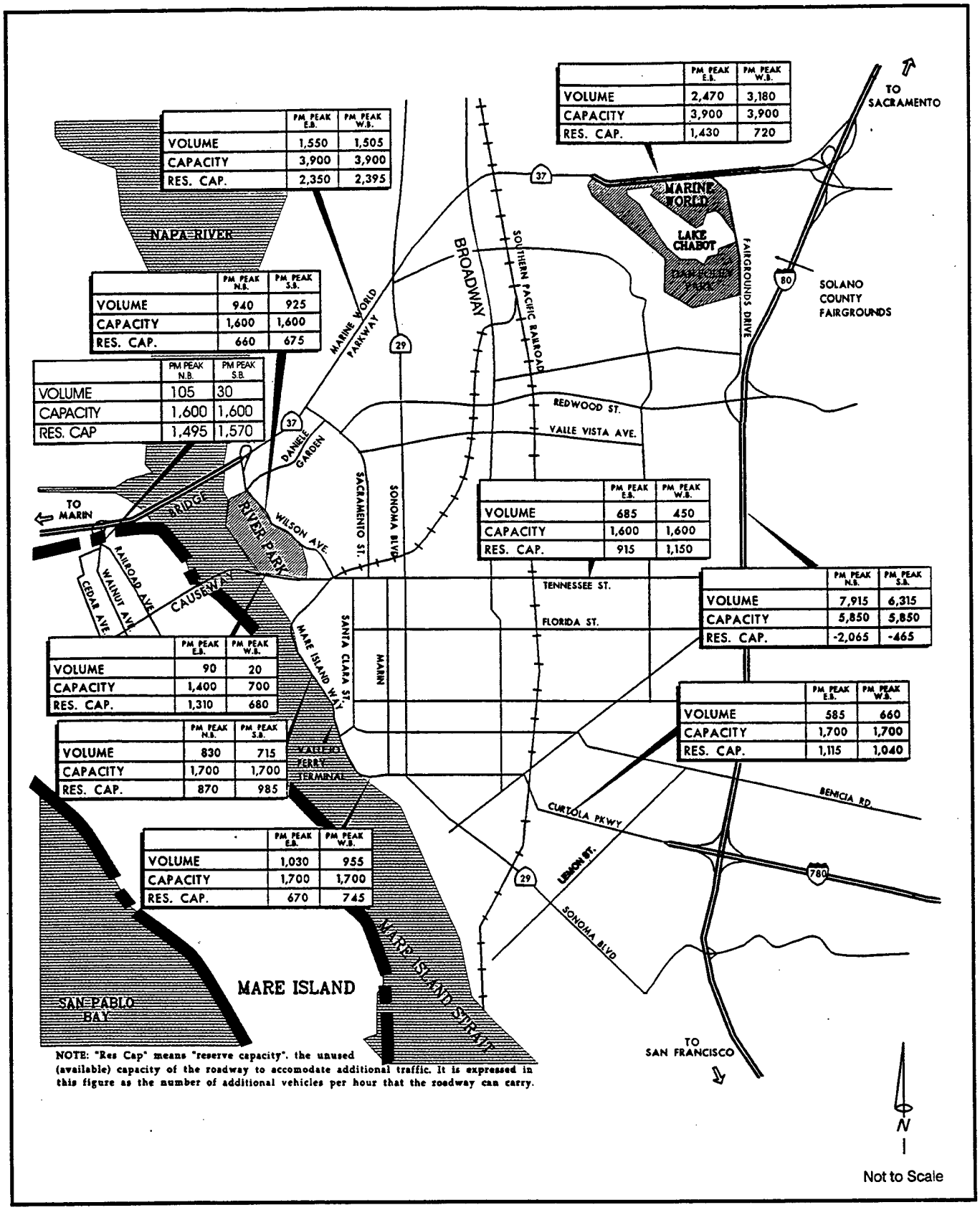
- As shown in Figure 4-5, no analyzed locations on local access roadways would exceed capacity under this alternative with the addition of Mare Island generated traffic and Vallejo 2020 traffic volumes. The local roadway improvements (Table 4-18) are assumed to be implemented for this alternative because they are fully funded. No mitigation is required.

Mare Island Access Routes

- Because of the minimum amount of PM peak-hour traffic projected for this alternative, there would be no impacts to the roadway and access route system. For this alternative, it is assumed that the existing street system would remain, and no roadway improvements would occur. No mitigation is required.

Parking Impacts

- Caretaker activities would generate some demand for parking, but the existing parking supply would far exceed the demand. This impact is not significant and no mitigation is required.



	PM PEAK E.B.	PM PEAK W.B.
VOLUME	1,550	1,505
CAPACITY	3,900	3,900
RES. CAP.	2,350	2,395

	PM PEAK E.B.	PM PEAK W.B.
VOLUME	2,470	3,180
CAPACITY	3,900	3,900
RES. CAP.	1,430	720

	PM PEAK N.B.	PM PEAK S.B.
VOLUME	940	925
CAPACITY	1,600	1,600
RES. CAP.	660	675

	PM PEAK N.B.	PM PEAK S.B.
VOLUME	105	30
CAPACITY	1,600	1,600
RES. CAP	1,495	1,570

	PM PEAK E.B.	PM PEAK W.B.
VOLUME	685	450
CAPACITY	1,600	1,600
RES. CAP.	915	1,150

	PM PEAK N.B.	PM PEAK S.B.
VOLUME	7,915	6,315
CAPACITY	5,850	5,850
RES. CAP.	-2,065	-465

	PM PEAK E.B.	PM PEAK W.B.
VOLUME	90	20
CAPACITY	1,400	700
RES. CAP.	1,310	680

	PM PEAK E.B.	PM PEAK W.B.
VOLUME	585	660
CAPACITY	1,700	1,700
RES. CAP.	1,115	1,040

	PM PEAK N.B.	PM PEAK S.B.
VOLUME	830	715
CAPACITY	1,700	1,700
RES. CAP.	870	985

	PM PEAK E.B.	PM PEAK W.B.
VOLUME	1,030	955
CAPACITY	1,700	1,700
RES. CAP.	670	745

NOTE: "Res Cap" means "reserve capacity", the unused (available) capacity of the roadway to accomodate additional traffic. It is expressed in this figure as the number of additional vehicles per hour that the roadway can carry.

Roadway volumes and capacities define roadway operation.

LEGEND:

Mare Island Naval Shipyard Property Boundaries (excluding submerged land)

Source: City of Vallejo, 1994c

No Action Alternative: Peak Hour Reserve Capacity for Primary Access Routes

Mare Island, California

Figure 4-5

Nonsignificant Impacts

- Minimal ongoing truck activity would be expected under this alternative. Any periods of peak truck activity would be short and not result in traffic impact significant. No mitigation is required.

4.10 AIR QUALITY

The following section evaluates air quality impacts that could occur under disposal and the various reuse alternatives. The analysis includes construction and demolition activities, traffic-related emissions, and industrial emissions and odors. Average weekday vehicle travel and resulting vehicle emissions are summarized in Table 4-22 for the various reuse alternatives and the No Action Alternative. Analyses for the alternative reuse plans assume a continuation of ridesharing, transit, and related trip reduction measures.

Region of Influence

The ROI appropriate for air quality issues will vary according to the type of air pollution being discussed. Primary pollutants, such as carbon monoxide and directly emitted particulate matter, have a localized ROI generally restricted to Vallejo or to areas in the immediate vicinity of the source of emissions. Secondary pollutants, such as ozone and secondary particulate matter, have a ROI that includes the entire San Francisco Bay Area.

Significance Criteria

Significance criteria for evaluating air quality impacts can be based on physical impacts, regulatory standards, or consistency with plans for meeting air quality standards. Air quality impacts are typically judged to be significant if the action would directly or indirectly:

- cause or contribute to a violation of state or Federal ambient air quality standards;
- cause a net increase in pollutant or pollutant precursor emissions that exceed the BAAQMD emission significance thresholds (15 tons per year for reactive organic compounds, nitrogen oxides, or PM_{10});
- conflict with specific air quality management plan policies or programs; or
- foster or accommodate development in excess of levels assumed by the applicable air quality management plan.

The choice of significance criteria for physical air quality impact issues is dictated largely by the technical procedures used for the impact assessment. Dispersion modeling analyses are performed to evaluate the potential for causing or contributing to violations of Federal or state carbon monoxide air quality standards. The significance of ozone precursor emissions is evaluated in the context of BAAQMD emission significance thresholds.

Table 4-21 provides a summary of air quality impacts and their significance.

TABLE 4-21
SUMMARY OF AIR QUALITY IMPACTS AND SIGNIFICANCE

IMPACT ISSUES	NAVY ACTIONS		COMMUNITY REUSE ALTERNATIVES		
	Disposal	No Action Alternative	Reuse Plan	Medium Density	Open Space
Construction dust	○	◐	◑	◑	◑
Southern crossing fugitive dust	○	○	◑	○	○
Asbestos release from demolition and renovation	○	◐	◐	◐	◐
Traffic-related ozone and PM_{10} precursor emissions	○	◐	◐	◐	◐
Increase in carbon monoxide hot spots	○	◐	◐	◐	◐
Consistency with air quality plan policies	○	○	◐	◐	◐
Industrial emissions and odors	○	○	◐	◐	◐
Air quality impacts at Roosevelt Terrace and Main Entrance	○	○	◐	◐	◐

LEGEND:

Level of Impact

- ● = Significant and not mitigable
- ◑ = Significant and mitigable
- ◐ = Nonsignificant
- ○ = No impact

4.10.1 Disposal

Property disposal actions would have no direct air quality impacts. Transfers of ownership, interests and titles to land, facilities, real property or personal property to other public agencies or to private parties are exempt from Clean Air Act conformity determination requirements, 40 C.F.R. §93.153(c)(xiv); 40 C.F.R. §93.153(c)(xix); 40 C.F.R. §93.153(c)(xx).

Stationary air emission sources permanently taken out of service through the disposal process can be credited through the ERC process administered through BAAQMD. Banked ERCs can be used later to meet emission offset requirements for other new stationary emissions sources. As shown in Table 3-21, some permits held by the Navy have been cancelled, with the resulting emission reductions banked to meet future permit requirements at DOD facilities. Any future development establishing new stationary emission sources would be required to comply with applicable BAAQMD permit requirements.

4.10.2 Reuse Plan Alternative

Construction and Demolition

Impact 1: A temporary significant and mitigable impact would result from the dust generated by building demolition, renovation, and construction activities. The BAAQMD air quality impact assessment guidelines (BAAQMD 1996) recognize fugitive dust from construction activity as a significant impact and emphasize the importance of implementing adequate dust control programs.

The Reuse Plan Alternative does not provide any specific construction, renovation, or demolition schedules. Construction, renovation, and demolition activities would occur in response to future tenant requirements over the buildout period for the plan. Consequently, annual construction, renovation, and demolition emissions have not been quantified for the Reuse Plan Alternative. Most construction, demolition, and building renovation activity would occur in Reuse Areas 1, 2, 3, 5, and 10.

Mitigation 1: The following dust control practices would mitigate fugitive dust impacts during demolition, construction, and renovation activities to a nonsignificant level:

- Use mowing rather than discing for weed control, thus minimizing ground disturbance and leaving a soil cover in place;
- Seed and water inactive portions of construction sites to maintain a grass cover;
- Minimize the area disturbed by clearing, earthmoving, or excavation activities;
- Prevent excessive dust generation by using water or dust control solutions on all unpaved areas subject to vehicle traffic, grading, or excavation;
- Ensure that any petroleum-based dust control products used on the site meet BAAQMD regulations for cutback asphalt paving materials;
- Halt all site clearing, grading, earthmoving, and excavation activities during periods of sustained strong winds (hourly average wind speeds of 20 mph or greater);
- Sweep streets adjacent to the construction site as necessary to remove accumulated dust and soil; and

- Properly maintain all construction vehicles and avoid excessive idling of inactive equipment.

Impact 2: A temporary significant and mitigable impact would result from the dust generated during construction of the southern crossing bridge and associated connecting roadways. Construction activities would cause local fugitive dust problems on the Mare Island or Vallejo side of the bridge. This could affect residential and commercial uses in Vallejo neighborhoods close to the bridge construction area. The BAAQMD air quality impact assessment guidelines (BAAQMD 1996) recognize fugitive dust from construction activity as a significant impact and emphasize the importance of implementing adequate dust control programs.

Mitigation 2: Implementing the dust control measures described under Mitigation 1 would reduce this impact to a nonsignificant level.

Nonsignificant Impacts

- *Asbestos Emissions from Demolition and Remodeling Activities.* Building renovation and demolition activities have the potential for causing airborne release of asbestos-containing materials. Adhering to BAAQMD asbestos removal regulations would minimize the potential risks associated with demolition and renovation activities. No mitigation is required.

- *Traffic-related Ozone Precursor and* PM_{10} *Emissions.* Average weekday vehicle traffic and resulting vehicle emissions are summarized in Table 4-22 for the various reuse alternatives. Also shown for comparison in Table 4-22 are emission estimates for the No Action Alternative and activity levels associated with preclosure shipyard operations.

  Since the 1994 Clean Air Plan reflected operational conditions at Mare Island Naval Shipyard, this preclosure condition has been used to evaluate whether the reuse alternatives would produce a significant net increase in regional traffic-related ozone precursor emission. As indicated in Table 4-22, vehicle traffic and resulting ozone precursor and PM_{10} emissions under the Reuse Plan Alternative would be lower than those associated with preclosure conditions. This would not represent a net increase in regional ozone precursor emissions or PM_{10} emissions and would not be a significant impact. No mitigation is required.

TABLE 4-22
VEHICLE TRAVEL AND EMISSION ESTIMATES FOR ALTERNATIVE REUSE PLANS

Parameter	Parameter Values by Alternative				
	Reuse Plan Alternative	Medium Density Alternative	Open Space Alternative	No Action Alternative	Preclosure Shipyard Conditions
Average daily vehicle trips	60,224	35,100	31,095	2,404	76,350
Average daily VMT	585,188	355,018	318,946	23,149	712,457
Annual ROG emissions (tons/year)	111.3	66.3	59.4	4.5	153.5
Annual Nox emissions (tons/year)	178.2	108.0	96.4	8.0	305.3
Annual CO emissions (tons/year)	1,227.8	745.2	671.0	50.3	1,541.2
Annual PM_{10} emissions (tons/year)	40.5	24.5	21.9	1.7	59.4

Notes: VMT = vehicle miles traveled
ROG = reactive organic compounds
NOx = nitrogen oxides
CO = carbon monoxide
PM_{10} = inhalable particulate matter

Vehicle trip estimates incorporate adjustments to remove double-counting internal trips (trips between Mare Island land uses) and adjustments for the effect of trip reduction programs.
Vehicle emission factors were developed using the EMFAC7F emission rate program for the buildout time frame (about 2020).
Vehicle emissions analyses incorporate different vehicle mixes, travel time patterns, and speed profiles for residential and nonresidential trips.
Preclosure conditions emissions are consistent with the travel patterns used for the Mobile Source Emissions Inventory for Preclosure Conditions at Mare Island (1996), but also include travel between DOD housing and off-base land uses.

- *Potential Carbon Monoxide Hot Spots.* Table 4-23 summarizes dispersion modeling results for traffic conditions associated with the reuse alternatives and the No Action Alternative. Modeled carbon monoxide concentrations do not show any violations of state or Federal carbon monoxide standards; consequently, this impact would not be significant. No mitigation is required.

- *Industrial Emission Sources.* Reusing industrial facilities and establishing new industrial operations would either continue the operation of existing industrial emission sources or would establish new emission sources. As indicated previously in Table 3-21, the Navy has transferred 60 emission sources together with applicable permits to interim lease tenants. The Navy has also transferred 225 other emission sources plus applicable permits to the LRA, which can use them to support implementation of the reuse plan.

  When a stationary source is permanently taken out of service, its air quality permits are normally surrendered. BAAQMD regulations establish procedures for obtaining credit for the resulting reduction in emissions. These emission reduction credits (ERCs) can be formally registered and banked with the BAAQMD. Banked ERCs can be used later to meet emission offset requirements for other new stationary emission sources. ERCs can also be bought, sold, traded or given to other parties to meet permit-related emission offset requirements.

TABLE 4-23
SUMMARY OF CARBON MONOXIDE MODELING RESULTS

Location	Buildout Year Carbon Monoxide Concentrations (ppm) by Reuse Alternative							
	Reuse Plan Alternative		Medium Density Alternative		Open Space Alternative		No Action Alternative	
	1-Hour	8-Hour	1-Hour	8-Hour	1-Hour	8-Hour	1-Hour	8-Hour
North Gate	7.7	5.8	6.9	5.2	5.2	3.9	1.5	1.1
California Ave. & G St.	4.7	3.5	5.2	3.9	4.2	3.2	1.3	1.0
Railroad Ave. & G St.	6.9	5.2	7.1	5.3	5.6	4.2	1.4	1.1
Walnut Ave. & G St.	4.6	3.5	4.6	3.5	4.1	3.1	1.4	1.1
Cedar Ave. & G St.	5.0	3.8	5.1	3.8	4.8	3.6	1.3	1.0
California Ave. & A St.	5.7	4.3	5.6	4.2	5.2	3.9	1.3	1.0
Railroad Ave. & A St.	6.2	4.7	6.1	4.6	5.5	4.1	1.3	1.0
Walnut Ave. & A St.	5.7	4.3	5.6	4.2	5.3	4.0	1.3	1.0
Cedar Ave. & A St.	5.0	3.8	5.0	3.8	4.7	3.5	1.3	1.0
Railroad Ave. & 8th St.	5.0	3.8	4.5	3.4	4.1	3.1	1.3	1.0
Walnut Ave. & 10th St.	4.9	3.7	4.3	3.2	4.0	3.0	1.2	0.9
Cedar Ave. & 9th St.	3.9	2.9	3.5	2.6	3.2	2.4	1.2	0.9
Farragut Village	3.0	2.3	2.9	2.2	2.7	2.0	1.2	0.9
Coral Sea Village	3.1	2.3	3.0	2.3	2.7	2.0	1.2	0.9
Wilson Ave. & Tennessee St.	4.8	3.6	4.4	3.3	4.1	3.1	3.3	2.5

Notes: ppm = parts per million, by volume
Applicable ambient air quality standards are 20 ppm for 1-hour (state standard) and 9 ppm for 8 hours (state and Federal standards).
Modeling analyses were performed with the CALINE4 dispersion model, using vehicle emission rates generated with EMFAC7F.
Meteorological conditions assumed for the analysis included a 1 meter per second wind speed, class E vertical stability, sigma theta of 10 degrees, a 50-meter mixing height limit, and wind directions varied in 10 degree increments
Modeled receptor locations were generally 50 feet from roadway centerlines, except at Farragut Village and Coral Sea Village (450 feet) and at Wilson Avenue and Tennessee Street (75 feet).
Carbon monoxide concentrations presented in this table represent the maximum modeled 1-hour increment at each location plus a 1-hour background increment of 1-4 ppm, depending on location. The background component accounts for parking facilities and roadways that were not directly modeled.
Peak 8-hour concentrations were estimated from total 1-hour concentrations, assuming a 75% persistence factor.

Developed by Tetra Tech.

Future industrial developments that establish new stationary emission sources would have to comply with applicable BAAQMD permit requirements. Existing BAAQMD rules require that emission offsets be obtained for any new stationary source that has the potential ozone precursor emissions greater than 5 pounds per day. Because existing BAAQMD regulations would minimize any net increase in industrial source emissions, this impact is considered to be nonsignificant. No mitigation is required.

- *Roosevelt Terrace and Main Entrance.* Reducing the number of apartments at Roosevelt Terrace would reduce associated traffic and air pollutant emissions. Renovations at the Main Entrance would not cause any

change in projected traffic patterns and thus would have no significant air quality impacts. No mitigation is required.

- *Consistency with BAAQMD Air Quality Plan and the City Air Quality Element.* The state CEQA guidelines normally require a finding of significant impact if a project conflicts with adopted environmental plans or goals. The Reuse Plan Alternative would be consistent with many of the land use and transportation policies contained in the BAAQMD Air Quality Plan and the Vallejo General Plan Air Quality Element.

  The Reuse Plan Alternative provides for mixed-use and interspersed residential, commercial, and retail uses to minimize travel distances for work and shopping trips. Development patterns would emphasize pedestrian-scale activity clusters with pedestrian and bicycle circulation features. The historic center would have limited auto access and would be served by remote parking and shuttle service. In addition, ferry service across Mare Island Strait would be investigated. It is anticipated that transit service would be extended onto Mare Island. A Cedar Avenue/Railroad Avenue transit loop would place most developed areas within a 5-minute walk of the transit route.

  Although the Reuse Plan Alternative is consistent with the various policies contained in the Air Quality Element of the Vallejo General Plan, the specific land use pattern proposed in the reuse plan has not been incorporated into the regional air quality plan prepared by BAAQMD, ABAG, and MTC. As indicated in Table 4-22 by the preclosure shipyard conditions analysis, emissions associated with the Reuse Plan Alternative are not beyond the range of emissions associated with past shipyard operations. In addition, Federal and state legislation requires periodically updating adopted regional air quality management plans. Because required updating provides a mechanism for addressing changing land use and transportation plans, this issue would not be considered a significant impact. No mitigation is required.

4.10.3 Medium Density Alternative

Construction and Demolition

Impact 1: Temporary significant and mitigable construction-related air quality impacts would occur under the Medium Density Alternative, similar to those discussed for the Reuse Plan Alternative. No significant construction activity would occur in Reuse Area 10.

Mitigation 1: Same as for the Reuse Plan Alternative.

Nonsignificant Impacts

- *Asbestos Emissions from Demolition and Remodeling Activities.* Building renovation and demolition activities under the Medium Density Alternative would be similar to those under the Reuse Plan Alternative. These impacts could be reduced by complying with BAAQMD asbestos removal regulations. No mitigation is required.

- *Traffic-Related Ozone Precursor and PM_{10} Emissions.* As indicated in Table 4-22, vehicle traffic and resulting ozone precursor and PM_{10} emissions under the Medium Density Alternative would be lower than those associated with preclosure conditions. Since there would not be a net increase in regional ozone precursor emissions or PM_{10} emissions, this impact would not be significant. No mitigation is required.

- *Potential Carbon Monoxide Hot Spots.* As shown in Table 4-23, traffic associated with the Medium Density Alternative would not cause or contribute to violations of the Federal or state carbon monoxide standards; consequently, this impact would not be significant. No mitigation is required.

- *Industrial Emission Sources.* The emissions consequences of industrial facilities under the Medium Density Alternative would be similar to those discussed for the Reuse Plan Alternative. BAAQMD permit procedures and emission offset requirements would apply. Because BAAQMD regulations would minimize the net change in industrial source emissions, this impact would be considered nonsignificant. No mitigation is required.

- *Roosevelt Terrace and Main Entrance.* Air quality impacts at Roosevelt Terrace and the Main Entrance would be identical to those discussed for the Reuse Plan Alternative. These impacts would not be significant and no mitigation is required.

- *City Air Quality Element and BAAQMD Air Quality Plan Policy Consistency.* Air quality plan consistency issues for the Medium Density Alternative are similar to those discussed under the Reuse Plan Alternative. The Medium Density Alternative would implement many of the land use and transportation policies contained in the BAAQMD Air Quality Plan and the Vallejo General Plan Air Quality Element. Although there would be less residential development than under the Reuse Plan Alternative, industrial and commercial development should be adequate to support transit and ferry service proposals. No mitigation is required.

The specific land use pattern proposed in the Medium Density Alternative has not been incorporated into the regional air quality plan prepared by BAAQMD, ABAG, and MTC. Because required updating provides a mechanism for addressing changing land use and transportation plans, this issue would not be considered a significant impact. No mitigation is required.

4.10.4 Open Space Alternative

Construction and Demolition

Impact 1: Temporary significant and mitigable construction-related air quality impacts under the Open Space Alternative would be similar to those discussed for the Reuse Plan Alternative. No significant construction activity would occur in Reuse Area 10.

Mitigation 1: Same as for the Reuse Plan Alternative.

Nonsignificant Impacts

- *Asbestos Emissions from Demolition and Remodeling Activities.* Building renovation and demolition activities under the Open Space Alternative would be similar to those under the Reuse Plan Alternative. These impacts could be reduced by complying with BAAQMD asbestos removal regulations. No mitigation is required.

- *Traffic-Related Ozone Precursor and PM_{10} Emissions.* As indicated in Table 4-22, vehicle traffic and resulting ozone precursor and PM_{10} emissions under the Open Space Alternative would be lower than those associated with preclosure conditions. Since there would not be a net increase in regional ozone precursor emissions or PM_{10} emissions, this impact would not be significant. No mitigation is required.

- *Potential Carbon Monoxide Hot Spots.* As shown in Table 4-23, traffic associated with the Open Space Alternative would not cause or contribute to violations of the Federal or state carbon monoxide standards. Consequently, this impact would not be significant. No mitigation is required.

- *Industrial Emission Sources.* The emissions consequences of industrial facilities under the Open Space Alternative would be less intensive but otherwise similar to those discussed for the Reuse Plan Alternative. BAAQMD permit procedures and emission offset requirements would apply. Because BAAQMD regulations would minimize the net change in industrial source emissions, this impact would be considered nonsignificant. No mitigation is required.

- *Roosevelt Terrace and Main Entrance.* Air quality impacts at Roosevelt Terrace and the Main Entrance would be identical to those discussed for the Reuse Plan Alternative. No mitigation is required.

- *City Air Quality Element and BAAQMD Air Quality Plan Policy Consistency.* The Open Space Alternative would implement many of the land use and transportation policies contained in the BAAQMD Air Quality Plan and the Vallejo General Plan Air Quality Element. Although there would be less intensive development than under the Reuse Plan Alternative or the Medium Density Alternative, industrial and commercial development should be adequate to support transit and ferry service proposals. No mitigation is required.

  The specific land use pattern proposed in the Open Space Alternative has not been incorporated into the regional air quality plan prepared by BAAQMD, ABAG, and MTC. Because required updating provides a mechanism for addressing changing land use and transportation plans, this issue would not be considered a significant impact. No mitigation is required.

4.10.5 No Action Alternative

Nonsignificant Impacts

- *Asbestos Emissions from Demolition Activities.* Minimal demolition would occur under the No Action Alternative. Building demolition activities have the potential for causing airborne release of asbestos-containing materials. Adhering to BAAQMD asbestos removal regulations would minimize the potential risks associated with demolition activities. No mitigation is required.

- *Construction and Demolition.* Caretaker status under the No Action Alternative would not require any construction activities. Minimal building, infrastructure, and landscaping maintenance activities would occur. Minimal building demolition activities could occur. Consequently, the No Action Alternative would not result in significant emissions from construction or demolition activities. No mitigation is required.

- *Traffic-related Ozone Precursor and PM_{10} Emissions.* Caretaker status under the No Action Alternative would generate only a minor amount of vehicle traffic, as indicated in Table 4-22. Vehicle emissions associated with this traffic would be well below the preclosure activity levels. Consequently, the No Action Alternative would not have a significant impact on ozone precursor emissions or PM_{10} emissions in the Vallejo area. No mitigation is required.

- *Potential Carbon Monoxide Hot Spots.* Caretaker status under the No Action Alternative would generate only a minor amount of vehicle traffic. As indicated in Table 4-23, the resulting traffic volumes would not produce significant carbon monoxide concentrations on Mare Island or in adjacent portions of Vallejo; consequently, the No Action Alternative would not cause or contribute to any potential carbon monoxide hot spot problems in the Vallejo area. No mitigation is required.

- *Industrial Emission Sources.* The No Action Alternative would not generate any industrial land uses; consequently, there would be no impacts from industrial sources of air emissions. No mitigation is required.

- *Roosevelt Terrace and Main Entrance.* Minimal maintenance activities would occur at Roosevelt Terrace and the Main Entrance under the No Action Alternative. Therefore, no impacts to air quality would occur at these locations. No mitigation is required.

- *City Air Quality Element and BAAQMD Air Quality Plan Consistency.* Retaining Mare Island Naval Shipyard under caretaker status would result in a significant reduction in stationary source, area source, and mobile source emissions at Mare Island compared to preclosure conditions and to the various reuse alternatives. The resulting emission reductions would not conflict with any programs or policies contained in regional air quality plans or the Vallejo General Plan Air Quality Element. No mitigation is required.

- *Federal Agency Clean Air Act, 42 U.S.C. §7506, Conformity Issues.* Retaining Mare Island Naval Shipyard under caretaker status would not require a Clean Air Act Conformity Determination because resulting annual direct and indirect emissions would clearly be less than the applicable de minimis levels. No mitigation is required.

4.11 NOISE

This section discusses the noise impacts that may result from disposal and reuse of Federal surplus land at Mare Island and evaluates the No Action Alternative. The analysis focuses on the effects of demolition and construction, traffic noise, and on the compatibility of noise and land uses.

Region of Influence

The attenuation of noise levels with increasing distance from the noise source results in a fairly limited ROI for noise issues. For this EIS/EIR, the overall ROI is Vallejo. A more localized ROI is appropriate for some discrete noise sources; such localized ROI are generally within a half mile of the noise source.

Significance Criteria

The primary criteria used to judge the significance of noise impacts generally are derived from Federal, state, or local land use compatibility guidelines or from regulatory thresholds established by state or local codes. The noise element of the Vallejo General Plan provides land use compatibility criteria applicable to general urban noise sources.

The L_{10} noise descriptor used in the Vallejo noise element is not directly comparable to noise descriptors used in common noise modeling procedures or to land use compatibility guidelines used by other agencies. Consequently, the L_{10} descriptors from the Vallejo noise element have been converted to approximately equivalent CNEL values for use in this EIS/EIR (see Table 3-23).

Annoyance effects are the primary impact consideration for most land use compatibility criteria. Because reaction to noise level changes involves both physiological and psychological factors, the magnitude of noise level change can be as important as the resulting overall noise level. Local residents often will consider a readily noticeable increase in noise levels a significant effect even if the overall noise level is still within land use compatibility guidelines. On the other hand, noise level increases that are not noticeable to most people generally are considered less than significant from a project-related incremental perspective. Table 4-24 summarizes noise impacts and their significance.

TABLE 4-24
SUMMARY OF NOISE IMPACTS AND SIGNIFICANCE

IMPACT ISSUES	NAVY ACTIONS		COMMUNITY REUSE ALTERNATIVES		
	Disposal	No Action Alternative	Reuse Plan	Medium Density	Open Space
Demolition and construction	○	◐	◑	◑	◑
Southern crossing construction	○	○	◑	○	○
Use of rifle range	○	○	◑	◑	◐
Industrial operation	○	○	◑	◑	◑
On-island traffic noise	○	○	◑	◑	◑
Off-island traffic noise	○	○	◐	◐	◐
Off-island rail noise	○	○	◐	◐	◐

LEGEND:

Level of Impact
- ● = Significant and not mitigable
- ◑ = Significant and mitigable
- ◐ = Nonsignificant
- ○ = No impact

The following noise impact significance criteria are used in this EIS/EIR:

- An incremental CNEL decrease would be considered a beneficial impact even if the overall CNEL exposure remains above land use compatibility criteria.
- A projected-related noise level increase of 3 dB or more would be considered a significant impact if noise sensitivity land uses are affected and if the overall noise level is within 5 dB of the land use compatibility criteria.
- An incremental CNEL increase of any magnitude would be considered a significant impact if the overall CNEL exposure is 5 dB or more above the land use compatibility criteria.

An incremental CNEL increase that results in an overall CNEL exposure that exceeds general plan land use compatibility criteria would be considered a significant cumulative impact even though the incremental change may be less than significant.

4.11.1 Disposal

No direct noise impacts would result from property disposal by the Navy.

4.11.2 Reuse Plan Alternative

Demolition and Construction

Impact 1: A temporary significant and mitigable noise impact would be generated by demolition and construction activities, which could cause temporary disturbance to adjacent land uses. Any occupied residential locations within 1,100 feet of construction sites or within 2,500 feet of pile driving sites may experience temporary disturbance from construction noise.

Table 4-25 summarizes heavy equipment noise estimates for typical construction sites. If heavy equipment operations occur over a daytime 10-hour workday, CNEL increments would exceed 58 dB for locations within about 1,100 feet of the work site. Any construction that requires pile driving would affect a more extensive area. Pile driving equipment generates a highly disturbing impulsive noise, with average noise levels of about 95-100 dBA and peak noise levels above 105 dBA at 50 feet. If pile driving occurs over a 10-hour workday, CNEL increments would exceed 58 dB for locations within about 2,500 feet of the work site.

The general scale of most construction and demolition projects indicates that there would be few long duration construction projects. The eastern portion of Farragut Village (Reuse Area 8) may be affected by construction activities in Reuse Areas 1, 2, and 3. Occasional construction and demolition activity would occur in most other reuse areas. New residential construction is planned for Reuse Areas 1, 2, 9, and 10. New residential development in these areas also may be affected by construction noise associated with commercial or industrial land uses.

Mitigation 1: Limit construction activities to normal daytime work hours (7 AM to 6 PM), Monday through Saturday, with no construction on Sundays or Federal holidays. Implementing this mitigation would reduce the impact to a nonsignificant level.

Impact 2: A significant and mitigable noise impact could be generated during construction of the proposed southern crossing bridge. Construction noise could adversely impact adjacent residential areas on Mare Island and in Vallejo. Resulting noise levels could exceed noise element and land use compatibility guidelines depending upon the locations of the bridge and types of property uses being affected by the increase in noise. Because the precise location and timing for constructing the southern crossing bridge are not known, it is difficult to evaluate the significance of construction noise impacts for this facility. Potential construction noise impacts would depend on the location and design of the bridge abutment and access roads.

TABLE 4-25
TYPICAL CONSTRUCTION SITE NOISE IMPACTS

Receptor Distance (feet)	Noise Level Increment (dBA) at Receptor			Combined Equipment Noise (dBA)	Work Day L_{dn} Increment (dB)
	Bulldozer	Loader	Truck		
50	85.0	80.0	85.0	88.6	84.8
100	78.9	73.9	79.0	82.6	78.8
200	72.7	67.8	72.9	76.4	72.6
400	66.2	61.5	66.7	70.1	66.3
600	62.2	57.7	63.0	66.3	62.5
800	59.3	54.9	60.3	63.5	59.7
1,000	56.9	52.6	58.1	61.2	57.4
1,500	52.2	48.3	54.1	57.0	53.2
2,000	48.6	45.1	51.2	53.7	49.9
2,500	45.5	42.4	48.7	51.1	47.3
3,000	42.8	40.1	46.7	48.8	45.0
4,000	38.0	36.0	43.2	45.0	41.2
5,280	32.7	31.7	39.6	40.9	37.1
7,500	24.6	25.3	34.4	35.3	31.5
9,000	19.6	21.4	31.3	32.0	28.2
10,560	14.6	17.6	28.4	28.9	25.1

Notes: Combined equipment noise level and CNEL increment calculations assume a bulldozer, front end loader, and heavy truck operating concurrently in proximity to each other over a 10-hour workday.

Noise calculations include minimum atmospheric absorption rates of 0.75 dB/100 meters for bulldozers, 0.5 dB/100 meters for front end loaders, and 0.32 dB/100 meters for heavy trucks.

Atmospheric absorption calculated from source spectrum data for a range of temperature and humidity conditions; minimum absorption rates (cool temperatures and high humidity) used for noise calculations.

Except for sounds with highly distinctive tonal characteristics, noise from a particular source will not be identifiable when its incremental noise level contribution is significantly less than background noise levels.

Sources: Table is product of modeling conducted for EIS/EIR. Input data taken from US Environmental Protection Agency, 1971; Gharabegian, et al., 1985; Acoustical Society of America, 1978.

Property located within approximately 300 feet of the bridge could exceed noise element land use compatibility guidelines for urban residential uses. Property located within 500 feet of the could exceed the criteria for medical land uses. Should the southern crossing connect to Highway 29, the noise impacts on residential neighborhoods would be somewhat limited, although noise impacts along Highway 29 would increase. Should the southern crossing connect to I-80, noise impacts on adjacent residential neighborhoods would be more extensive, while noise levels on I-80 would not change significantly. Detailed noise analyses would be prepared as part of the project specific environmental documentation required following development of a design concept.

Mitigation 2(a): Minimize construction noise impacts by properly selecting site location and by coordinating facility construction with adjacent development in Reuse Area 10 on Mare Island and adjacent areas in Vallejo. Recognize and address potential noise impacts in areas near both the east and west ends of the bridge in location and design studies.

Mitigation 2(b): Identify locations in facility design and route selection studies that place bridge abutments and access roadways in commercial or industrial areas on Mare Island or in Vallejo. A corridor alignment from Railroad Avenue and 17th Street to Solano Avenue and SR 29 may allow such a design.

Mitigation 2(c): Coordinate the phasing of residential development in Reuse Area 10 with design and construction of the southern crossing so as to minimize noise impacts near the construction site.

Mitigation 2(d): Limit heavy construction equipment and pile driver use to normal daytime work hours.

Implementation of these mitigations would reduce the impact to a nonsignificant level.

Noise/Land Use Compatibility Conflicts

Impact 3:. A significant and mitigable noise impact would result from relocating the rifle range to the proposed regional park. The noise generated by use of the range would conflict with passive recreational uses. Proper site planning for the new rifle range location would be necessary to avoid conflicts with recreational or residential land uses at the southern end of Mare Island.

Mitigation 3: Remove the rifle range from Mare Island. Implementing this mitigation would reduce the impact to a nonsignificant level.

Impact 4: A significant and mitigable noise impact could result from industrial operations at Mare Island. These uses could generate noise levels incompatible with adjacent noise sensitive land uses, although the proposed reuse plan generally provides spatial separation and buffering land uses that should minimize the potential for noise problems from industrial operations, significant noise impacts could occur for some types of noisy industrial operations.

Mitigation 4: Perform noise evaluations of heavy industrial operations prior to approval to ensure that site location and site design features will avoid potential noise problems. Implementing this mitigation would reduce the impact to a nonsignificant level.

Traffic Generated Noise

Impact 5: Significant and mitigable traffic noise impacts would occur at Railroad and 8th and along Cedar Avenue (see Table 4-26). The increase in noise levels south of 8th Street would be due in part to traffic patterns associated with the proposed southern crossing bridge. The most significant noise impact would be expected along Cedar Avenue between 7th and 12th Streets, where residential development may be exposed to traffic noise levels well above the 58 CNEL criterion. Coordinated land use and transportation planning could help reduce noise impacts by directing high traffic volumes from this section of Cedar Avenue toward other roadways.

Mitigation 5: Use roadway designs and traffic controls to discourage high traffic volumes along Cedar Avenue in the Farragut Village neighborhood. Implementing this mitigation would reduce the impact to a nonsignificant level.

Nonsignificant Impacts

- *On-island Traffic Noise.* Buildout of the Reuse Plan Alternative would result in either no change or a minimal increase to most on-island traffic noise levels. Table 4-26 summarizes traffic noise modeling results at Mare Island. Under the reuse alternatives resulting noise levels generally would be within 5 dB of the applicable land use compatibility criteria. These impacts would not be significant and no mitigation is required.

- *Off-island Traffic Noise.* Buildout of the Reuse Plan Alternative, assuming construction of the southern crossing bridge, would increase traffic volumes on off-site roadways, as presented in Section 4.9. The largest relative increase in traffic volume would occur on SR 37 east of Mare Island. Noise level increases along SR 37 would be about 2.4 dB east of Sacramento Street and about 1 dB west of Fairgrounds Drive. Noise level increases would be about 1.2 dB along Mare Island Way, 0.9 dB along Tennessee Street, and 0.5 to 1 dB along Curtola Way. Noise level increases would be minor along Wilson Avenue and on Interstate 80. None of these noise level increases would represent a significant noise impact. These off-site noise impacts would be nonsignificant. No mitigation is required.

- *Off-island Rail Operations.* The railroad spur from Broadway to Mare Island Causeway would be used to provide rail service to industrial facilities on Mare Island. Rail operations along this spur would generate temporary noise impacts on adjacent land uses. The use of this spur is and was very limited, with only a few railcar movements per month. Use of

TABLE 4-26
SUMMARY OF TRAFFIC NOISE MODELING RESULTS

Location	Traffic Noise CNEL Estimate (decibels) by Alternative					Approximate CNEL Criteria for General Plan Land Use Compatibility
	Reuse Plan	Medium Density	Open Space	No Action	Preclosusre Conditions	
North Gate	68.6	68.3	67.7	63.4	67.6	72
California St. and G St.	67.5	67.1	66.3	53.5	68.9	72
California St. and A St.	65.6	64.0	63.6	51.0	65.5	72
Railroad Avenue and G St.	70.2	69.8	68.9	56.1	70.4	72
Railroad Avenue and A St.	68.6	67.0	66.4	54.1	66.8	72
Railroad Avenue and 8th St.	70.0	67.3	66.7	53.8	65.8	67
Walnut Avenue and G St.	68.4	68.0	67.2	55.8	68.2	67
Walnut Avenue and A St.	69.5	68.1	67.5	54.4	68.0	67
Walnut Avenue and 10th St.	68.7	66.9	66.4	52.5	65.8	67
Cedar Avenue and G St.	65.6	64.6	64.1	53.1	66.7	67
Cedar Avenue and A St.	67.0	64.4	64.1	50.0	67.0	67
Cedar Avenue and 9th St.	66.7	63.9	63.3	47.3	65.8	58
Farragut Village	57.8	55.4	54.9	43.0	55.6	58
Coral Sea Village	56.7	53.4	52.8	41.3	52.9	67

Notes: Modeling analyses were performed using the Federal Highway Administration traffic noise prediction model (Barry and Reagan 1978), California vehicle noise level data (Hendriks 1984), and estimated hourly traffic conditions.
Modeling results are for locations 50 feet from roadway centerlines at intersections and 450 feet from Cedar Avenue at Farragut Village and Coral Sea Village.
General Plan land use compatibility criteria are based on CNEL approximations presented in Table 3-23.

Developed by: Tetra Tech 1995.

the spur line is expected to remain limited to a few railcars at a time. If use of the rail spur increased to 2 movements per day, rail operations would generate an CNEL increment of 48 dB at a distance of 50 feet from the tracks. Sounding the locomotive horn would add a brief noise event of about 100 dBA. These noise events would not be a significant impact. No mitigation is required.

- *Roosevelt Terrace and Main Entrance.* The reduction in density at Roosevelt Terrace will reduce neighborhood traffic volumes and resulting traffic noise. The magnitude of the resulting noise level reductions along local roadways will be too small to be readily noticeable. The office building and parking improvements at the main entrance will not have any significant impact on local traffic noise levels. No mitigation is required.

4.11.3 Medium Density Alternative

Demolition and Construction

Impact 1: A temporary significant and mitigable noise impact would result from demolition and construction activities, as described for the Reuse Plan Alternative. No construction would occur in Reuse Area 10. Construction noise impacts could be reduced to acceptable levels by restricting most construction activity to normal daytime periods.

Mitigation 1: Same as for the Reuse Plan Alternative.

Noise/Land Use Compatibility Conflicts

Impact 2: A significant and mitigable noise impact would result from retention of the rifle range in its present location. The noise generated from use of the range would not be compatible with surrounding residential land uses.

Mitigation 2: Remove the rifle range from Mare Island. Implementing this mitigation would reduce impacts to a nonsignificant level.

Impact 3: A significant and mitigable impact would result from industrial operations as described for the Reuse Plan Alternative. Although the amount of industrial development would be reduced compared to the Reuse Plan Alternative, the potential for conflicts with neighboring land uses would depend on individual industrial uses, not the total amount of industrial development.

Mitigation 3: Same as for the Reuse Plan Alternative.

Traffic Generated Noise

Impact 4. A significant and mitigable noise impact would occur at Cedar and 9th Street in the vicinity of Farragut Village as indicated by Table 4-26. The projected increase in noise levels would exceed the land use compatibility criteria for residential use (58 dB).

Mitigation 4: Same as for the Reuse Plan Alternative.

Nonsignificant Impacts

- *On-island Traffic Noise.* Buildout of the Medium Density Alternative as indicated in Table 4-26 would generate nonsignfiicant on-island traffic noise levels at most studied intersections. Because the Medium Density Alternative would not include the southern crossing, traffic noise levels

south of 8th Street generally would be consistent with land use compatibility criteria.

- *Off-island Traffic Noise.* Buildout of the Medium Density Alternative would increase traffic volumes on off-island roadways, as presented in Section 4.9. The largest relative increase in traffic volume would occur on Mare Island Way. Noise level increases along Mare Island Way would be about 2.2 dB. Noise level increases along SR 37 would be about 1.8 dB east of Sacramento Street and about 0.8 dB west of Fairgrounds Drive. Noise level increases would be about 1.6 dB along Curtola Parkway west of SR 29 and 0.7 dB along Curtola Parkway east of SR 29. Noise levels would increase by 0.5 dB along Wilson Avenue. Noise level increases would be along Tennessee Street and on Interstate 80. None of these noise level increases would represent a significant noise impact. No mitigation is required.

- *Off-island Rail Operations.* Off-site rail noise impacts under the Medium Density Alternative would be the same as those described for the Reuse Plan Alternative. These noise events would not be a significant impact. No mitigation is required.

- *Roosevelt Terrace and Main Entrance.* Noise impacts at Roosevelt Terrace and the Main Entrance under the Medium Density Alternative would be the same as those discussed under the Reuse Plan Alternative. No mitigation is required.

4.11.4 Open Space Alternative

Demolition and Construction

Impact 1: A temporary significant and mitigable noise impact would result from demolition and construction activities, as described for the Reuse Plan Alternative, although at a reduced level. No construction would occur in Reuse Area 10. Construction noise impacts could be reduced to acceptable levels by restricting most construction activity to normal daytime periods.

Mitigation 1: Same as for the Reuse Plan Alternative.

Noise/Land Use Compatibility Conflicts

Impact 2: A significant and mitigable noise impact could be generated by industrial operations. These levels could be incompatible with adjacent noise sensitive land uses. Impacts would be similar to those discussed for the Medium Density Alternative.

Mitigation 2: Same as for the Reuse Plan Alternative.

Nonsignificant Impacts

- *Elimination of Rifle Range.* The existing rifle range on Mare Island would be eliminated under the Open Space Alternative, thus eliminating a potential source of noise complaints. No mitigation is required.

Traffic Generated Noise

Impact 3: A significant and mitigable traffic noise impact would occur at Cedar Avenue near 9th. This area is in the vicinity of Farragut Village and noise levels would exceed the land use compatibility criteria of 58 CNEL (see Table 4-26). It could be possible to eliminate this noise problem by careful coordination of land use and transportation system plans.

Mitigation 3: Same as for the Reuse Plan Alternative.

Nonsignificant Impacts

- *On-island Traffic Noise.* Buildout of the Open Space Alternative as illustrated by Table 4-26 would produce slightly lower noise levels than the Medium Density Alternative.

- *Off-island Traffic Noise.* Buildout of the Open Space Alternative would increase traffic volumes on off-island roadways, as presented in Section 4.9. The largest relative increase in traffic volume would occur on Mare Island Way. Noise level increases along Mare Island Way would be about 1.8 dB. Noise level increases along SR 37 would be about 1.5 dB east of Sacramento Street and about 0.6 dB west of Fairgrounds Drive. Noise level increases would be about 1.3 dB along Curtola Parkway west of SR 29 and 0.6 dB along Curtola Parkway east of SR 29. Noise levels would increase by 0.4 dB along Wilson Avenue. Noise level increases would be minor along Tennessee Street and on Interstate 80. None of these noise level increases would represent a significant noise impact. No mitigation is required.

- *Off-island Rail Operations.* Off-island rail noise impacts under the Open Space Alternative would be the same as those described for the Reuse Plan Alternative. These noise events would not be a significant impact. No mitigation is required.

- *Roosevelt Terrace and Main Entrance.* Noise impacts at Roosevelt Terrace and the Main Entrance under the Medium Density Alternative would be

the same as those discussed under the Reuse Plan Alternative. No mitigation is required.

4.11.5 No Action Alternative

Nonsignificant Impacts

- *Demolition and Construction.* Caretaker status under the No Action Alternative would not require any significant construction or demolition activities. Consequently, no significant noise impacts are anticipated. No mitigation is required.

- *Land Use Compatibility Conflicts.* Caretaker status under the No Action Alternative would result in minimal active land use. Consequently, no noise-related land use compatibility problems are anticipated. No mitigation is required.

- *On-island Traffic Noise.* Caretaker status under the No Action Alternative would result in minimal on-island traffic. Anticipated traffic noise levels are summarized in Table 4-26. All predicted noise levels are consistent with applicable land use compatibility criteria. Consequently, there would be no traffic-related noise impacts. No mitigation is required.

- *Off-island Traffic Noise.* Caretaker status under the No Action Alternative would result in minimal off-island traffic. Consequently, there would be no traffic-related noise impacts. No mitigation is required.

4.12 UTILITIES

This section addresses the impacts of the various alternatives on the Mare Island utility systems. Impacts are evaluated by comparing the demand for the utilities resulting from buildout of the alternatives to the capacities of the utilities. The utility systems include water, wastewater, solid waste management, telephone, natural gas, electrical, and stormwater.

Region of Influence

The ROI used in this analysis is Mare Island, the Main Entrance, Roosevelt Terrace, and the surrounding bodies of water.

Significance Criteria

A project may have significant impacts on public utilities if it increases demand in excess of utility system capacity to the point that substantial expansion of the infrastructure would be necessary. Significant environmental impacts may also result from system deterioration due to improper maintenance or extension of service beyond the system's useful life. Project impacts also would be considered significant if Federal, state, or local standards or requirements regulating a public utility system were violated. For example, failure to monitor and sample stormwater discharges, as required under the NPDES permit, could result in fines or permit revocation. Table 4-27 summarizes impacts to utilities and their significance.

TABLE 4-27
SUMMARY OF UTILITY IMPACTS AND SIGNIFICANCE

IMPACT ISSUES	NAVY ACTIONS		COMMUNITY REUSE ALTERNATIVES		
	Disposal	No Action Alternative	Reuse Plan	Medium Density	Open Space
Water storage capacity	○	○	◐	◐	◐
Water demand	○	○	◐	◐	◐
Water distribution system	○	○	◐	◐	◐
Wastewater system capacity	○	○	◑	◐	◐
Solid waste composition and capacity impacts	○	○	◐	◐	◐
Gas service capacity impacts and replacement of steam and hot water loop	○	○	◐	◐	◐
Electrical service capacity and condition	○	○	◐	◐	◐
Stormwater runoff	○	○	◐	◐	◐

LEGEND:
Level of Impact
● = Significant and not mitigable
◑ = Significant and mitigable
◐ = Nonsignificant
○ = No impact

4.12.1 Disposal

The disposal action, as a transfer of ownership, would have no direct significant impacts to utilities at Mare Island. Utility easements will be established for the gas, electric and telephone systems that have or will be sold as personal property to established utility providers.

4.12.2 Reuse Plan Alternative

Water Distribution System

Nonsignificant Impacts

- Mare Island would not be able to meet Vallejo water storage requirements at full buildout of the Reuse Plan Alternative. In general, water storage should be equivalent to one day's operational, fire flow, and emergency use at maximum daily demand and should be available from gravity flow sources (i.e., elevated or upgradient storage tanks). Under the Reuse Plan Alternative, water demands at buildout would be equivalent to system capacity. By buildout, water storage would need to be increased to comply with city operating and sizing criteria. As identified in the reuse plan, existing water storage tanks will be replaced by two 3.25-million gallon water storage tanks to provide gravity storage of approximately 6.5 million gallons of water, as required by the projected buildout water demand (Vallejo 1994c). No mitigation is required.

- The decreased water demand in the years between disposal and buildout of Mare Island would positively affect regional water supply. Under the Reuse Plan Alternative, the Mare Island resident population at full buildout (2020) is projected to be 5,075. Mare Island employment in 2020 is projected to be 9,669; therefore, regional water supply would not be adversely affected by buildout of the Reuse Plan Alternative. Actual demand at buildout would depend on the types of businesses that locate on the island and the distribution of industrial, commercial, and residential uses. No mitigation is required.

- Although the population of Mare Island would not increase beyond capacity levels at full buildout, the distribution of residential housing would change. Under the Reuse Plan Alternative, the southern part of the island, formerly an industrial area, would be developed with 750 condominium units (Reuse Area 10), increasing water demand to this part of the island over historic levels. Computer modeling indicates that the existing water mains in this area would not meet maximum daily and fire flow demands (Vallejo 1994c). Replacing the existing 4-inch and 6-inch dead-end mains with one 12-inch dead-end main to provide the necessary

flow, as proposed by the reuse plan, would maintain acceptable system pressures in the southern part of the island, eliminating this potential impact. No mitigation is required.

Wastewater System

Impact 1. A significant and mitigable impact would result from sanitary waste generation levels equaling or slightly exceeding system capacity. Where significant changes in population distribution occur, such as for the proposed 750 condominiums on the south end of Mare Island (Reuse Area 10), the existing collection system may be inadequate.

Mitigation 1. Assess the existing portions of the collection system and improve as necessary where significant increases in population would result from proposed development. Implementing this mitigation would reduce the impact to a nonsignificant level.

Solid Waste Management

Nonsignificant Impacts

- The shift from heavy industrial to more residential and commercial activities under reuse would likely result in a shift in the composition of waste generated at the shipyard. The substantial residential and commercial construction, demolition, and remodeling activities planned over the course of buildout would result in increases in construction and demolition (C&D) debris. This would be a nonsignificant impact, but opportunities should be identified for recycling C&D waste and for increasing waste diversion rates. No mitigation is required.

- As solid waste management responsibilities are transferred from the Navy to Vallejo, Federal surplus land on Mare Island would be incorporated fully into the city's solid waste management system. As such, Vallejo would be required to include applicable Mare Island waste management and recycling activities as part of its regulatory compliance responsibilities, as set forth in the California Integrated Waste Management Act and subsequent legislation. The act sets forth diversion goals of 25 percent by 1995 and 50 percent by 2000 and requires annual reporting, and establishing household hazardous waste services. The city could incorporate applicable portions of Mare Island into its Source Reduction and Recycling Element and Solano County's Integrated Waste Management Plan; therefore, the impact would not be significant. No mitigation is required.

Gas Service

Nonsignificant Impacts

- The main hot water loop and the steam plant have been shut down. Abandoning the steam plant and hot water loop would result in the need to heat affected buildings by an alternative source such as natural gas. The new owner of the natural gas system, Island Energy, would be responsible for providing service as needed on the island. This is a less than significant impact and no mitigation is required.

Electrical Service

Nonsignificant Impacts

- The existing electrical facilities may be inadequate for the Reuse Plan Alternative. The new owner of the electrical system, Island Energy, would be responsible for maintaining and upgrading the system as necessary to serve the island. Potential projects for maintaining and upgrading the system may include sealing underground electrical vaults against water intrusion, abating asbestos in cable insulation, replacing the power distribution in base housing areas, and installing new electrical service meters throughout the island. No mitigation is required.

Stormwater

Nonsignificant Impacts

- Stormwater runoff would increase as Reuse Areas 1, 2, 3, 6, and 10 are developed with impervious parking lots and roads. This increase would add to the load on the stormwater system, which is already inadequate to handle existing runoff from developed areas in a major storm, resulting in a significant impact. The VSFCD requires a minimum stormwater pipe diameter of 12 inches. Many of the existing stormwater pipes are less than 12 inches in diameter. The reuse plan includes capital improvements to the storm drainage system. Implementing the proposed capital improvements in a manner that corresponds to island development, including replacing the undersized pipe with regulation-sized piping, would eliminate this impact. No mitigation is required.

- The VSFCD is required to have a stormwater management plan. When Federal surplus property is conveyed to Vallejo, the VSFCD will have to revise its plan to include those areas. In addition, Mare Island currently operates under a state General Industrial Activities Stormwater Discharge Permit, which views Mare Island as a single industrial operation. Once the

city assumes ownership of the system, other permitting requirements may be triggered. If the city elects to continue the general industrial uses, the activities would most likely remain under the state General Industrial Permit. Once VSFCD owns the system, it likely would require each industrial activity operating on the island to obtain, when applicable, a specific industrial permit for discharging stormwater into the district's storm drain system. If multiple owners perform operations on definable sites, each would be required to obtain individual NPDES permits specific to their operation. This would not be a significant impact, and no mitigation is required.

4.12.3 Medium Density Alternative

Most of the impacts and mitigations identified for the Reuse Plan Alternative also would be applicable to the Medium Density Alternative. The one major difference between the 2 alternatives is that there would be no development in the Retail/Residential Area (Reuse Area 10) under this alternative.

Water Distribution System

Nonsignificant Impacts

- Water storage requirements would exceed the system capacity, as under the Reuse Plan Alternative. Mare Island would not be able to meet Vallejo water storage requirements at full buildout of the Medium Density Alternative. As proposed by the reuse plan, water storage on Mare Island will be increased to accommodate increased demand. No mitigation is necessary.

- As under the Reuse Plan Alternative, the decreased water demand in the years between disposal and buildout of Mare Island should positively affect regional water supply, while buildout demand should not significantly impact the supply. No mitigation is required.

- Residential development in this alternative is the same as in the Reuse Plan Alternative, with one exception. There would be no residential development in the southern part of the island and no increase in water demand at this location. The existing water mains should be sufficient to deliver water to this area and would not require replacing with a larger main, resulting in no significant impact. No mitigation is required.

Wastewater System

Nonsignificant Impacts

- The population under this alternative would be approximately 40 percent less than under the Reuse Plan Alternative. The sanitary wastewater flow to the VSFCD treatment plant would increase in the years between disposal and full implementation of this reuse alternative, but this increase would not significantly affect the capacity of the VSFCD treatment plant. No mitigation is required.

Solid Waste Management

Nonsignificant Impacts

- The shift from heavy industrial to more residential and commercial activities likely would result in a shift in the composition of waste generated at the shipyard. This would be a less than significant impact, but opportunities should be identified for recycling C&D waste and for increasing waste diversion rates. No mitigation is required.

- Under this alternative, as under the Reuse Plan Alternative, Vallejo would be required to include applicable Mare Island waste management and recycling activities as part of its regulatory compliance responsibilities, as set forth in the California Integrated Waste Management Act and subsequent legislation. The city could incorporate applicable portions of Mare Island into its Source Reduction and Recycling Element and Solano County's Integrated Waste Management Plan; therefore, the impact would not be significant. No mitigation is required.

Gas Service

Nonsignificant Impacts

- The main hot water loop and the steam plant have been shut down. Buildings connected to these systems would not have an existing heating system, which could affect their future reuse. Island Energy would be responsible for providing natural gas service where needed. This is a less than significant impact. No mitigation is required.

Electric Service

Nonsignificant Impacts

- As described under the Reuse Plan Alternative, the deficiencies in the electrical system could require substantial capital improvements to that system. The new electrical system owner, Island Energy, would be responsible for maintaining and upgrading the system. No mitigation is required.

Stormwater

Nonsignificant Impacts

- Under the Medium Density Alternative, fewer existing Mare Island developed areas would be reused than under the Reuse Plan Alternative, including the Retail/Residential Area. However, some new impervious areas still would be developed in Reuse Area 1 and may be developed in Reuse Areas 2, 3, 6, and 10. This would increase the load on the stormwater system to a lesser degree than the Reuse Plan Alternative but still would exceed the capacity of the existing stormwater system during a major storm and would not meet VSFCD minimum pipe size requirements. Improvements to that system, included as part of the CIP, would eliminate this impact. No mitigation is required.

- As under the Reuse Plan Alternative, when Federal surplus property is conveyed to Vallejo, the VSFCD will have to revise its stormwater management plan to include those areas. In addition, once the city assumes ownership of the system, other permitting requirements may be triggered. This would not be a significant impact and no mitigation is required.

4.12.4 Open Space Alternative

Many of the same reuse areas are developed under this alternative as under the Medium Density Alternative but to a lesser degree. The major differences that would affect utilities are eliminating the golf course and rifle range and not developing the Retail/Residential Area (Reuse Area 10).

Water Distribution System

Nonsignificant Impacts

- Water storage requirements would exceed the system capacity, as under the Reuse Plan Alternative. As proposed in the reuse plan, water storage

capacity will be expanded to accommodate the increased demand. No mitigation is required.

- Reuse under the Open Space Alternative reuse would not adversely affect water distribution. Under this alternative, the population would increase to 2,703. Projected employment would increase to 4,804. Potable water demand on Mare Island should increase gradually but to levels less than preclosure conditions. The demand in both the interim years and following the Open Space Alternative buildout would not adversely affect regional water supply. No mitigation is required.

- As under the Medium Density Alternative, there would be no residential development in the southern part of the island, eliminating the potential significant impact on water mains in that area. No mitigation measures are required. No mitigation is required.

Wastewater System

Nonsignificant Impacts

- The sanitary wastewater flow to the VSFCD treatment plant would increase gradually in the years between disposal and full implementation of this project alternative. The industrial wastewater flow generated should be significantly less than that in the Reuse Plan Alternative and slightly less than that in the Medium Density Alternative. This would not significantly adversely affect the VSFCD treatment plant capacity. No mitigation is required.

Solid Waste Management

Nonsignificant Impacts

- The shift from heavy industrial to more residential and commercial activities would likely result in a shift in the composition of waste generated at the shipyard. This would be a less than significant impact, but opportunities should be identified for recycling C&D waste and for increasing waste diversion rates. No mitigation is required.

- Under this alternative, as under the Reuse Plan Alternative, Vallejo would be required to include applicable Mare Island waste management and recycling activities as part of its regulatory compliance responsibilities, as set forth in the California Integrated Waste Management Act and subsequent legislation. The city could incorporate applicable portions of Mare Island into its Source Reduction and Recycling Element and Solano

County's Integrated Waste Management Plan; therefore, the impact would not be significant. No mitigation is required.

Gas Service

Nonsignificant Impacts

- The main hot water loop and the steam plant have been shut down. Buildings connected to these systems would not have an existing heating system, which could affect their future reuse. Island Energy would be responsible for providing natural gas service where needed. This is a less than significant impact. No mitigation is required.

Electric Service

Nonsignificant Impacts

- As described under the Reuse Plan Alternative, the deficiencies in the electrical system could require substantial capital improvements to that system for reuse. The new electrical system owner, Island Energy, would be responsible for maintaining and upgrading the system. No mitigation is required.

Stormwater

Nonsignificant Impacts

- Under the Open Space Alternative, fewer Mare Island developed areas would be reused than under the Reuse Plan Alternative, including the Retail/Residential Area. However, some new impervious areas would still be developed. This would increase the load on the stormwater system to a lesser degree than the Reuse Plan Alternative and Medium Density Alternative but still would exceed the capacity of the existing stormwater system during a major storm and would not meet VSFCD minimum pipe size criteria. Improvements to the stormwater system included as part of the CIP would eliminate this impact. No mitigation is required.

- As under the Reuse Plan Alternative, when Federal surplus property is conveyed to Vallejo, the VSFCD will have to revise its stormwater management plan to include those areas. In addition, once the city assumes ownership of the system, other permitting requirements may be triggered. This would not be a significant impact and no mitigation is required.

4.12.5 No Action Alternative

The No Action Alternative would place Mare Island in caretaker status. Utilities would be operated by the Navy, Vallejo, or a private owner. Due to the minimal population during the caretaker period, this alternative would not affect the regional water supply, available capacity at the VSFCD sewage treatment plant, regional solid waste disposal capacity, natural gas system, telephone system, or electrical system.

4.13 HAZARDOUS MATERIALS AND WASTE

This section addresses the potential for environmental impacts caused by hazardous materials and hazardous waste-related activities associated with disposal and the reuse alternatives. The ROI relative to hazardous materials and waste issues is Mare Island, the surrounding waters, the Main Entrance, and Roosevelt Terrace.

Cleanup of contaminated sites at Mare Island is the responsibility of the Navy and is currently in progress. Identification of the contaminated sites is ongoing. Identified sites will be characterized and remediation response actions will be selected and implemented. Operation and maintenance of the response actions will continue until the cleanup is complete. A public and agency review board for the Mare Island property, the Restoration Advisory Board (RAB), has been established to provide agency and public input and oversight for the site cleanup process.

If the results of the risk assessment do not support reuse, the disposal of specific parcels may be delayed by contamination and remedial designs developed for contaminated sites. Examples of conditions resulting in possible land use restrictions include the capping of landfills and presence of long-term monitoring wells. These conditions would have to be considered in the layout of future development.

Related and personal property and equipment will be evaluated for environmental hazards content consistent with Navy instructions, and requisite removal or cleanup action will be taken by the Navy. Related and personal property and equipment requested by the LRA for reuse generally will be laid away for future transfer to the LRA. Related and personal property and equipment not requested by the LRA will be disposed of properly before property disposal.

The BRAC cleanup plan (BCP) summarizes the status of the environmental restoration and compliance programs and presents a strategy for carrying out response actions necessary to protect human health and the environment. Proposed reuse of the property was considered when the BCP was prepared. The BRAC Cleanup Team and the regulatory agencies are establishing risk-based cleanup levels to be consistent with the planned reuse. However, both the BCP and information about site conditions were evolving during the reuse planning process. For some alternatives, therefore, it is possible that the cleanup levels established for a particular area may not be consistent with the proposed reuse of that area.

Properties that contain or that potentially contain contamination may be conveyed prior to completion of environmental remediation only if the requirements of 42 U.S.C. §9620(h)(3) (West Sup. 1997) are met. These

conditions include agreement by US EPA and the state that the property is suitable for the intended use and that the intended use will protect human health and the environment, that property use restrictions to ensure that human health and the environment are protected, that there are assurances from the Federal government that conveyance of the property will not substantially delay response actions at the property and the Federal government will continue any necessary response actions after conveyance.

Significance Criteria

The following criteria were used to identify potential impacts:

- Reuses that would require plans or programs under Federal, state, or local law and for which no remediation plans or programs have been developed;
- New operational requirements or service for underground storage tanks and tank systems; and
- Releases that result in exposing the public or the environment to hazardous substances.

As reuse of the property is implemented, hazardous waste management would be controlled by the property recipients. Once the responsibilities of hazardous waste management are allocated to individual organizations, proficiency with those materials and spill response plans may be required by Resource Conservation and Recovery Act (RCRA), 42 U.S.C. §6901 *et seq.*, state, and local regulations. Business plans and risk management programs also may be required under State Health and Safety Code requirements.

The presence of numerous independent operators/owners on the property may change the implementation of existing regulatory requirements and may increase the regulatory burden relative to hazardous waste management. Table 4-28 summarizes hazardous material and waste impacts and significance.

4.13.1 Disposal

There would be no impacts caused by hazardous materials, hazardous waste or ordnance-related activities since this action would essentially transfer title from the Navy to non-Federal entities. Prior to real property conveyance, the Navy shall remediate hazardous substances and investigate and remove unexploded ordnance (UXO) contamination, to a level consistent with the protection of human health and the environment; or, if transferring contaminated property before completion of the required response actions under the applicable authority, shall ensure that the property is suitable for transfer for the use intended by the transferee, and that the intended use is consistent with protection of human health and the environment. In either case, future

property recipients will be advised and notified of the levels of remediation achieved and where appropriate, covenants, conditions or restrictions may be included in the deed to ensure protection of human health and the environment, taking into consideration the intended land uses.

TABLE 4-28
SUMMARY OF HAZARDOUS MATERIALS AND WASTE IMPACTS AND SIGNIFICANCE

IMPACT ISSUES	NAVY ACTIONS		COMMUNITY REUSE ALTERNATIVES		
	Disposal	No Action Alternative	Reuse Plan	Medium Density	Open Space
Hazardous materials usage	○	◐	◐	◐	◐
Hazardous waste generation	○	◐	◐	◐	◐
IR Program	○	○	◐	◐	◐
Asbestos	○	○	◐	◐	◐
PCBs	○	○	◐	◐	◐
Hazards from existing storage tanks	○	○	◐	◐	◐
Pesticides	○	○	◐	◐	◐
Lead hazards	○	○	◐	◐	◐
Radioactive material and waste	○	○	○	○	○
Medical/biohazardous waste	○	○	◐	◐	◐
Ordnance	○	○	◐	◐	◐
Radon	○	○	◐	◐	◐

LEGEND:

Level of Impact

- ● = Significant and not mitigable
- ◑ = Significant and mitigable
- ◐ = Nonsignificant
- ○ = No impact

4.13.2 Reuse Plan Alternative

Hazardous Materials Management

Nonsignificant Impacts

- The quantity of hazardous materials used, stored, and disposed of under the Reuse Plan Alternative reuse activities likely would decrease over preclosure conditions. Such uses are tightly controlled under current regulations. Hazardous materials likely to be used for activities in the proposed reuse areas are identified in Table 4-29.

  The greatest drop in the use of hazardous materials likely would occur in Reuse Areas 2 and 10, where land use would change from mainly industrial to mixed residential and commercial, and in Reuse Area 7 where

the small arms range will be converted to recreational uses. The use of hazardous materials in Reuse Areas 1, 3, 4, 5, 6, 8, 9, and 11 would not change significantly from historical uses because the land uses in these areas would not change. There would be a moderate drop in the use of

TABLE 4-29
HAZARDOUS MATERIALS USAGE BY LAND USE CATEGORY

Land Use	Operation Process	Hazardous Materials
Industrial	Activities associated with light industry, research and development, warehousing, and manufacturing	Solvents, heavy metals, petroleum oils and lubricants, corrosives, catalysts, aerosols, fuels, heating oils, ignitables, pesticides
Institutional	Hospital/clinic, rehabilitation facilities, X-ray unit	Pharmaceuticals, medical biohazardous materials, chemotherapeutic drugs, radiological sources, heavy metals
	Public education, higher education, research labs, training facilities, vocational schools	Laboratory chemicals, corrosives, ignitables, solvents, heating oils, solvents, lubricants, cleaners, pesticides, paints, thinners
Commercial	Activities associated with offices, light industry, research and development, and higher value warehousing, retail, service industries, restaurants	Fuels, heating oils, pesticides, dry cleaning chemicals, solvents, corrosives, petroleum oils and lubricants, ignitables
Residential	Utilization/maintenance of single-family and multifamily units, landscaping	Pesticides, fertilizers, fuels, oils, chlorine, and household chemicals
Recreation/Open Space	Maintenance of existing recreational facilities, including golf course, sports complex, swimming pools, and other recreational facilities	Pesticides, fertilizers, chlorine, heating oils, paints, thinners, cleaners, solvents, aerials, petroleum oils and lubricants

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hazardous materials in Reuse Area 13. Land in this area would be converted to open space and parks from its present use of industrial waste treatment.

With implementation of the Reuse Plan Alternative, separate organizations would be responsible for managing hazardous materials according to applicable regulations. Depending on types and quantities of hazardous materials used, each organization would be subject to Federal Superfund Amendments and Reauthorization Act (SARA) Title III, 42 U.S.C. §9601 note (West 1995) and state hazardous materials business plans and risk management prevention programs for emergency planning review and community right-to-know inventory reporting. Mutual aid agreements

with surrounding jurisdictions may require additional training for emergency staff. These impacts therefore would not be significant and no mitigation is required.

Hazardous Waste Management Practices

Nonsignificant Impacts

- Under the Reuse Plan Alternative, the total quantity of hazardous wastes generated and stored on the property would drop significantly. The largest drop in hazardous waste generation would occur in Reuse Areas 2 and 10 where land use would change from industrial to mixed residential and commercial and in Reuse Area 7 where the small arms range will be converted to recreational uses. There would be a moderate drop in hazardous waste generation in Reuse Areas 12 and 13 where land use would be converted to open space and parks. Hazardous waste generation in Reuse Areas 1, 3, 4, 5, 6, 8, 9, and 11 would not change significantly from preclosure levels because the land use in these areas would not change under the Reuse Plan Alternative.

  The greatest reductions in hazardous wastes storage at the former shipyard would be in Reuse Areas 3, 4, 5, 9, 12, and 13. The quantities of hazardous wastes stored in Reuse Areas 3, 4, and 5 during shipyard operation greatly exceed the quantities of hazardous wastes typically stored by private industry, which would occupy portions of these reuse areas under the Reuse Plan Alternative. In Reuse Areas 9 and 12, minimal amounts of hazardous wastes are likely to be generated or stored under the Reuse Plan Alternative. Nonsignificant impacts would be seen in Reuse Areas 1, 2, 6, 8, and 10. Limited quantities of hazardous waste were generated and stored in these areas; hazardous wastes likely will continue to be generated and stored in these areas in reduced quantities. There would be no impacts in Reuse Area 7 because no hazardous waste was stored in this area and no hazardous waste storage is planned there.

  Under the Reuse Plan Alternative, the 6 hazardous waste treatment facilities at Mare Island would remain closed. Five of these facilities are in Reuse Area 3, and the sixth facility is in Reuse Area 13. Any waste generated on-site would be treated and disposed of off-site. Removing hazardous waste generated on Mare Island for off-site treatment would result in a negative though not significant impact to the region. No mitigation is required.

Installation Restoration Program

Nonsignificant Impacts

- Reuse of some Mare Island properties may be delayed or limited by the extent and type of contamination at IRP sites and by current and future remediation activities. The type of development appropriate for property adjacent to or over an IRP site may be limited by the risk to human health and the environment posed by contaminants at the site. For example, residential development over an IRP landfill is generally not appropriate. The conflicts also could be between the Reuse Plan Alternative and the IRP in some of the reuse areas because some IRP sites may not be able to be remediated prior to buildout of the Reuse Plan Alternative in 2020. The 1996 amendments to §120(h)(3) of CERCLA that provide for the disposal of properties with residual contamination may minimize these delays. These potential delays and limitations would not be a significant environmental impact. No mitigation is required.

- Some reuse areas could have Preliminary Assessment/Site Investigation (PA/SI) sites on them. As investigations at these sites continue, any of these sites could be determined to have environmental problems that may not be able to be remediated prior to buildout of the Reuse Plan Alternative. As with the IRP sites, the 1996 CERCLA amendments that provide for the disposal of properties with residual contamination may minimize these delays. The BCP provides the status of ongoing environmental restoration programs and associated compliance activities. The BCP, updated periodically to reflect current conditions, is available for public review at local libraries. No mitigation is required.

- Based on the results of the IRP investigations, the Navy may, when appropriate, place limits on land reuse through deed restrictions on conveyances and use restrictions on leases. The Navy also may retain right-of-access to some properties to inspect monitoring wells or to conduct other remedial activities. These restrictions would not constitute a significant impact. No mitigation is required.

Asbestos

Nonsignificant Impacts

- Under the Reuse Plan Alternative, a number of buildings and residential structures with ACM would be demolished or renovated. This impact would not be significant. Such activities would be subject to all applicable Federal, state, and local regulations. DOD policy is that "property with ACM will not be disposed (of) through the BRAC process unless it is determined that the ACM does not pose a threat to human health at the

time of transfer." Since demolition activities would occur following transfer, buildings in the shipyard with ACM may present minor future human health risks. Any demolition or renovation would require compliance with OSHA regulations and the NESHAPs. No mitigation is required.

Polychlorinated Biphenyls

Nonsignificant Impacts

- Identifying potential PCB spill areas is underway. Because unidentified PCB release sites are likely to be relatively small, identifying, evaluating, and any necessary remediating of such sites is not likely to significantly impact or be impacted by implementing the Reuse Plan Alternative. No mitigation is required.

Storage Tanks and Oil/Water Separators

Nonsignificant Impacts

- Reuse activities associated with the Reuse Plan Alternative would require both ASTs and USTs. Reused and new USTs and ASTs required by the property recipients on Federal surplus and state reversionary land would be subject to all applicable Federal, state, and local regulations. These regulations include acceptable leak detection methods, spill and overfill protection, cathodic protection, secondary containment for hazardous waste tank systems including the piping, and liability insurance. These measures would reduce potential impacts to a less than significant level. No mitigation is required.

Pesticides

Nonsignificant Impacts

- Pesticide use and storage is likely to continue under the Reuse Plan Alternative in quantities similar to historic use. This would not be a significant impact. Mosquito abatement practices would need to be continued under the Reuse Plan Alternative throughout the island. Coordination between Vallejo and the State Lands Commission would be necessary to ensure continued abatement. No mitigation is required.

Lead

Nonsignificant Impacts

- Lead-based paints were used extensively at the shipyard since the 1800s, and it is likely that all of the buildings built before 1980 have some amount of lead-based paint. In accordance with DOD policy and the Residential Lead-based Paint Hazard Reduction Act of 1992, 42 U.S.C. §4851 note (West 1995) housing constructed prior to 1978 would be inspected for lead-based paint, lead-based paint in housing constructed prior to 1960 would be abated, and results of lead-based paint surveys and lead warning statements would be included in any contract for conveyance or lease. No mitigation is required.

Radioactive Materials and Wastes

No Impact

- Radioactive material and wastes have been stored at locations throughout the shipyard. Radioactive materials and wastes at the base were removed prior to base closure. Each of these storage locations was inspected for residual radioactivity, and radioactive materials were removed prior to closure (or in the case of a few outstanding G-RAM areas, shortly after closure). Cleanup of sites that had residual radioactivity did not require substantial time and thus had no adverse impact on the schedule of the post-closure reuse activities. No mitigation is required.

Medical and Biohazardous Waste

Nonsignificant Impacts

- The Naval Branch Medical Clinic was the only generator of medical and biohazardous waste at the facility, and only small quantities of such wastes were generated. This small amount of waste generation would not represent a significant impact. If the medical facility were reused for similar medical-related uses, the amount of biohazardous waste generated, stored, and disposed of would not be significant. The new facility would be required to comply with the requirements of the California Medical Waste Management Act for disposing of medical/biohazardous waste. No mitigation is required.

Ordnance

Nonsignificant Impacts

- Under the Reuse Plan Alternative, the former rifle range in Reuse Area 7 would be converted to a recreational field. The rifle range would be relocated to the southern part of the island in Reuse Area 12. In its current condition, the heavy metals contamination and live small arms ammunition in Reuse Area 7 would affect reuse of this area because lead-contamination and live ammunition could endanger public health and safety. The small arms range is currently under investigation. Prior to opening the area for planned public recreation, the site will be investigated and the area cleaned up to levels protective of human health and the environment. No environmental impact is expected from ordnance at this site. No mitigation is required.

- The south end of the island was used for manufacturing explosives and ammunition. This area is suspected to contain explosives residues and possibly live ordnance, a significant hazard to future reuse activities in this area. Under the Reuse Plan Alternative, the south end of the island would be developed as retail/residential uses (Reuse Area 10) and a regional park (Reuse Area 12). Explosive ordnance is suspected within fill material in Reuse Areas 10 and 12 and the wetlands. As described previously, Reuse Areas 10 and 12 are proposed for public use. Transfer of accountability or title of land containing unexploded ordnance is prohibited by the DOD Explosive Safety Board. Prior to opening these areas for planned redevelopment and recreation, ordnance will be removed, as recommended in the site investigation for Reuse Areas 10 and 12. Prior to property conveyance, covenants, conditions, or restrictions may be included in the deed to ensure protection of human health and the environment.

- Various calibers of live ammunition have been reported in materials dredged from the ammunition handling in the waterfront area. These materials have been placed in the dredge ponds, which will become more accessible to the public following property disposal. Once the property changes from military use, regardless of any fencing, the dredge ponds will become more accessible to the public. The ponds may be particularly attractive to children and may present a threat to health and safety. The dredge ponds also are under investigation as a designated PA/SI site. Prior to opening these areas for planned redevelopment, the sites will be inspected and cleaned up to levels protective of human health and the environment. Adequate security measures will be taken to restrict access prior to final cleanup.

- Live ammunition reportedly is submerged in the reserve fleet pier area (Reuse Area 1) and the ammunition handling industrial waterfront areas. The presence of this ordnance is incompatible with the proposed use of this site for recreation. Completely removing this material may be technically difficult because it is submerged. However, prior to opening these areas for planned redevelopment, the sites will be inspected and cleaned up to levels protective of human health and the environment.

- Naval gun propellant and small arms munitions frequently wash up on the shore in the dike 14 area (Reuse Area 12), creating a health and safety threat to future recreational users of this area. The presence of this ordnance is incompatible with the proposed use of this site for recreation. The dike 14 area also is under investigation as a PA/SI site. Prior to being conveyed for planned redevelopment, the sites will be inspected and cleaned up to levels protective of human health and the environment.

Radon

Nonsignificant Impacts

- A radon survey and partial assessment of shipyard properties indicate that some buildings could have radon levels marginally above the US EPA-recommended action level for further assessment or remediation. In accordance with DOD policy, all available and relevant radon assessment data will be included in any transfer or lease agreements. No mitigation is required.

4.13.3 Medium Density Alternative

Reuses identified under the Medium Density Alternative are generally consistent with the Reuse Plan Alternative. The primary difference is the lesser amount of redevelopment proposed under the Medium Density Alternative. For this reason, most of the impacts and mitigations identified for the Reuse Plan Alternative also would be applicable to the Medium Density Alternative.

Hazardous Materials and Waste Management Practices

Nonsignificant Impacts

- Under the Medium Density Alternative, as under the Reuse Plan Alternative, the total quantity of hazardous materials generated, used, and stored on the island likely would decrease over preclosure conditions. Such uses are tightly controlled by preclosure regulations and would not be a significant impact. No mitigation is required.

Installation Restoration Program

Nonsignificant Impacts

- Under the Medium Density Alternative, as under the Reuse Plan Alternative, remediation of IRP sites could delay or limit reuses in some reuse areas. This would not be a significant impact. No mitigation is required.

- Under the Medium Density Alternative, investigation and potential remediation of PA/SI sites could also delay or limit reuse of certain areas. This would not be a significant impact. No mitigation is required.

- Under this alternative, to protect human health and the environment, the Navy may retain rights-of-access or may place limits on land reuse through deed restrictions on conveyances and use restrictions on leases. This would not be a significant impact. No mitigation is required.

Asbestos

Nonsignificant Impacts

- The potential for future human health risk from asbestos-containing structures would be the same under this alternative as that described under the Reuse Plan Alternative. Any modifications to or demolition of these structures would be subject to all applicable Federal, state, and local regulations. This impact is not significant and no mitigation is required.

Polychlorinated Biphenyls

Nonsignificant Impacts

- The identification of potential PCB spill areas would continue under this alternative in the same manner as that described under the Reuse Plan Alternative. Because unidentified PCB release sites are likely to be relatively small, identifying, evaluating, and any necessary remediating of such sites is not likely to significantly impact or be impacted by implementing this alternative.

Storage Tanks and Oil/Water Separators

Nonsignificant Impacts

- Reuse under this alternative would be subject to all applicable Federal, state, and local regulations pertaining to ASTs and USTs, as described

under the Reuse Plan Alternative. This impact is not significant, and no mitigation is required.

Lead

Nonsignificant Impacts

- Reuse under this alternative would have the same impact as the Reuse Plan Alternative. Reuse activities would be subject to applicable Federal, state, and local regulations. This impact is not significant, and no mitigation is required.

Radioactive Materials and Waste

No Impact

- As identified for the Reuse Plan Alternative, these materials and waste were removed prior to base closure.

Medical and Biohazardous Waste

Nonsignificant Impacts

- As under the Reuse Plan Alternative, the medical clinic would be closed under this alternative. Impacts would not be significant, and no mitigation is required.

Ordnance

Nonsignificant Impacts

- As identified for the Reuse Plan Alternative, prior to being opened for planned redevelopment, areas containing known or suspected ordnance will be inspected and cleaned up to levels protective of human health and the environment. No mitigation is required.

Radon

Nonsignificant Impacts

- A radon survey and partial assessment of shipyard properties indicate that some buildings could have radon levels marginally above the US EPA-recommended action level for further assessment or remediation. In accordance with DOD policy, all available and relevant radon assessment data will be included in any contracts for conveyance or lease. No mitigation is required.

4.13.4 Open Space Alternative

The Open Space Alternative focuses on balancing development of the island with preservation of open space and recreational attributes. Many of the same reuse areas would be developed but to a lesser degree than under the Medium Density Alternative. Many of the impacts and mitigations therefore would be applicable to the Open Space Alternative.

Hazardous Materials and Waste Management Practices

Nonsignificant Impacts

- Under the Open Space Alternative, as under the Reuse Plan Alternative, the total quantity of hazardous materials generated, used, and stored on the island would decrease over preclosure conditions. The use of hazardous materials is tightly controlled under current regulations and would result in significant impacts. No mitigation is required.

Installation Restoration Program

Nonsignificant Impacts

- Under the Open Space Alternative, as under the Reuse Plan Alternative and Medium Density Alternative, remediation of IRP sites could delay or limit reuses in some reuse areas. The 1996 CERCLA amendments that provide for disposing of properties with residual contamination may minimize these delays. This would not be a significant impact. No mitigation is required.

- Under this alternative, investigation and potential remediation of PA/SI sites also could delay or limit reuse of certain areas. This would not be significant impact. No mitigation measures are required.

- Under this alternative, to protect human health and the environment, the Navy may retain rights-of-access or may place limits on land reuse through deed restrictions on conveyances and use restrictions on leases. This would not be a significant impact. No mitigation is required.

Asbestos

Nonsignificant Impacts

- The potential for future human health risk from asbestos-containing structures under this alternative would be similar to that described for the Reuse Plan Alternative and Medium Density Alternative. More of the buildings containing ACM would be demolished in this alternative,

resulting in more short-term potential for exposure but fewer long-term risks. This impact is not significant, and no mitigation is required.

Polychlorinated Biphenyls

Nonsignificant Impacts

- The identification of potential PCB spill areas would continue under this alternative in the same manner as that described under the Reuse Plan Alternative. Because unidentified PCB release sites are likely to be relatively small, identifying, evaluating, and any necessary remediating of such sites is not likely to significantly impact or be impacted by implementing this alternative.

Storage Tanks and Oil/Water Separators

Nonsignificant Impacts

- Reuse under this alternative would have the same impacts to ASTs and USTs as described under the Reuse Plan Alternative and Medium Density Alternative. These impacts are not significant, and no mitigation is required.

Lead

Nonsignificant Impacts

- Reuse under this alternative would have the same impact as the Reuse Plan Alternative. Most buildings would require notifying future owners of the presence of lead-based paint, as described previously. This impact is not significant and no mitigation is required.

Radioactive Materials and Waste

No Impact

- As identified for the Reuse Plan Alternative, these materials and wastes were removed prior to base closure.

Medical and Biohazardous Waste

Nonsignificant Impacts

- The medical clinic would be closed under this alternative, and no wastes would be generated, stored, or disposed of, as described under the Reuse

Plan Alternative and Medium Density Alternative. This impact is not significant, and no mitigation is required.

Ordnance

Nonsignificant Impacts

- As identified for the Reuse Plan Alternative, prior to being opened for planned redevelopment, areas containing known or suspected ordnance will be inspected and cleaned up to levels protective of human health and the environment. No mitigation measures are required.

Radon

Nonsignificant Impacts

- A radon survey and partial assessment of shipyard properties indicated that some buildings could have radon levels marginally above the US EPA-recommended action level for further assessment or remediation. No mitigation is required.

4.13.5 No Action Alternative

Under the No Action Alternative, all programs related to hazardous materials and waste would proceed without disruption. Investigation and cleanup of potential and identified contaminated sites would continue. Only limited amounts of hazardous materials and pesticides would be used at the former shipyard to maintain the site. The Navy would continue its compliance program for hazardous materials and waste.

Under the No Action Alternative, the Navy would continue to lease properties to various tenants that utilize hazardous materials and generate hazardous wastes. Management of these material or waste would continue according to current regulations and would be the responsibility of the various tenants.

Hazardous Materials Management

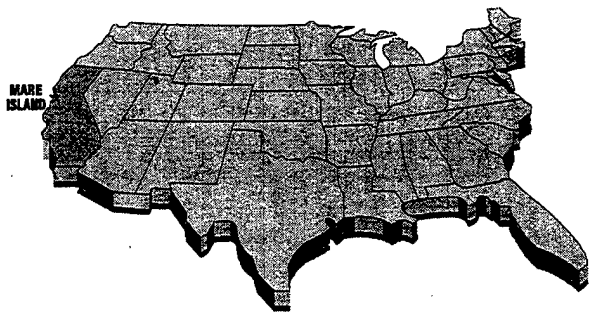
Nonsignificant Impacts

- The quantity of hazardous materials used, stored, and disposed of to support caretaker operations and interim leasing would decrease significantly over preclosure conditions. Such uses are tightly controlled under current regulations. These impacts would not be significant and no mitigation is required.

Hazardous Waste Management Practices

Nonsignificant Impacts

- Small quantities of hazardous wastes will be generated by caretaker and tenant operations. Management and disposal of these wastes are tightly controlled under current regulations. Impacts associated with hazardous waste management will not be significant and no mitigation is required.



5.0 OTHER CONSIDERATIONS

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5. OTHER CONSIDERATIONS

This chapter addresses additional specific topics that NEPA and CEQA require in an EIS/EIR. These include identifying unavoidable adverse impacts, short-term uses and long-term productivity, any irreversible and irretrievable commitment of resources, cumulative impacts, and growth-inducing impacts. Issues related to Environmental Justice and the Protection of Children from Environmental Health Risks and Safety Risks are also presented.

5.1 UNAVOIDABLE ADVERSE IMPACTS

An EIS/EIR must describe any significant unavoidable adverse environmental impacts for which either no mitigation or only partial mitigation is feasible and may include imposing an alternative design on the Reuse Plan Alternative if that is the only means of avoiding such impacts. For most of the identified significant impacts, feasible mitigation measures have been identified to reduce the impact to a nonsignificant level. Impacts for which no feasible mitigation measures have been identified are considered to be unavoidable adverse impacts. Unavoidable impacts associated with the alternatives are summarized below.

- *Land Use.* Construction of the southern crossing bridge in Vallejo would be an unavoidable adverse impact under the Reuse Plan Alternative. Construction of the bridge could result in demolition and/or relocating structures within and adjacent to the proposed bridge right-of-way, which would substantially alter land use patterns and would potentially divide the arrangement of this area of Vallejo. Locating the southern crossing to minimize impacts to these land uses and incorporating noise attenuation and visual buffers into the project design would reduce impacts but not to a nonsignificant level.

- *Visual Resources.* Impacts to sensitive viewpoints from constructing the southern crossing bridge would be an unavoidable adverse impact under the Reuse Plan Alternative. Constructing the southern crossing bridge would be prominently visible from viewpoints with high viewer sensitivity to the east, south, and southwest of Mare Island. Designing the bridge to avoid disturbing landscape and using existing materials to minimize visual contrast would reduce impacts but not to a level of nonsignificance.

5.2 SHORT-TERM USES AND LONG-TERM PRODUCTIVITY

NEPA and CEQA require that an EIS/EIR consider the relationship between short-term uses of the environment and the maintenance and enhancement of

long-term productivity. The analysis covers the extent to which both disposal and reuse involve trade-offs between short-term environmental gains at the expense of long-term losses, or vice versa.

The productivity of Mare Island historically has been related to its operation as a naval shipyard and the resulting jobs, products, and services it has provided. Since reuse of shipyard properties would make use of facilities that could otherwise be left unused, it would improve both the short-term and long-term economic productivity of Mare Island over conditions that would occur with a closed inactive base.

The reuse alternatives, with the mitigation measures identified in this report, would enhance the long-term productivity of the site. Long-term benefits include cleaning up contaminated sites, providing jobs, housing, and opportunities for various recreational uses, maintaining open space and various infrastructures on the site, and protecting endangered biological and historic resources.

5.3 IRREVERSIBLE/IRRETRIEVABLE COMMITMENT OF RESOURCES

NEPA and CEQA require that an EIS/EIR analyze the extent to which the disposal and reuse action's primary and secondary effects would commit nonrenewable resources to uses that future generations would probably be unable to reverse. Disposal of Navy property and structures increases options for site reuse and for responsible long-term resource management and makes no resource commitments.

To the extent that major investments are made in land uses that do not specifically depend on waterfront location there could be a relative loss of Bay Area property available to water dependent users. The reuse alternatives propose future uses of surplus land at Mare Island. This land would not be available for other uses after implementing one of the reuse alternatives. The reuse alternatives also would require significant commitments of both renewable and nonrenewable energy and material resources for rehabilitating, demolishing, or constructing the structures and infrastructure required to implement the proposed reuse. Redevelopment activities also could result in the irretrievable loss of a number of historic structures and archaeological resources through construction and demolition.

5.4 GROWTH- INDUCING IMPACTS

An EIR must discuss the ways in which the proposed action and alternatives could foster economic or population growth or the construction of additional housing, either directly or indirectly, in the surrounding environment. Analysis of growth-inducing effects includes those characteristics of the action

that may encourage and facilitate activities that, either individually or cumulatively, would affect the environment. Increasing population, for example, may impose new burdens on community service facilities; similarly, improving access routes may encourage growth. Growth may be considered beneficial, adverse, or of little significance environmentally, depending on its actual impacts to the environmental resources present.

The reuse alternatives would induce new economic or population growth in the region, even though certain specific features may promote localized growth. The proposed reuse actions will create a substantial number of jobs and housing opportunities that will benefit the region.

Developing a southern crossing bridge across Mare Island Strait, as proposed under the Reuse Plan Alternative, may induce local growth of commercial uses near the eastern crossing terminus in Vallejo. By improving access to Mare Island, the crossing also could induce a higher level of growth on the property than would otherwise occur. It is expected, however, that any new land use effects would be controlled by existing and future zoning and general plan designations on- and off-island. This issue would be examined in future environmental reviews that would be conducted before action would be taken on the southern crossing.

5.5 CUMULATIVE IMPACTS

An EIS/EIR must discuss cumulative impacts when they are significant, and, when not significant, the document should explain the basis for that conclusion. Cumulative impacts are defined as two or more individual effects that, when considered together, are considerable or that compound or increase other environmental impacts. Individual effects may be changes resulting from a single project or a number of separate projects. Cumulative effects from several projects are the change in the environment that results from the incremental impacts of the project when added to other past, present, and reasonably foreseeable future projects. Cumulative effects can result from individually minor but collectively significant projects occurring over the lifetime of the project.

Analysis of cumulative impacts must include regional effects in addition to potentially cumulatively significant localized effects. The region considered in this analysis is the northern San Francisco Bay Area, including Solano County, Napa County, and the cities of Vallejo, American Canyon, and Benicia, except for air quality and biological resource issues, where the entire San Francisco Bay Area is considered. The alternatives would be implemented concurrently with other projects that could contribute to local and regionally cumulative impacts. Potential cumulatively significant local projects include the proposed

uses on state reversionary lands and Federal transfer properties at the former Mare Island Naval Shipyard.

5.5.1 Projected Regional Growth

Napa County

Development in southern Napa County could add to potential cumulative impacts associated with reuse plan buildout. Napa County planning staff indicated that buildout of the Napa County Airport Industrial Area would be the major development over the next 25 years. This 2,900-acre area is about 5 miles north of Mare Island, west of SR 29 at SR 12, just across the Napa/Solano County line from Vallejo.

This project includes 569 acres designated for general industry, 1,354 acres designated for business/industrial park, 822 acres for airport uses, and 36 acres of agriculture/open space uses. About 15 acres of warehouse/office and research space has been approved, and applications for another 12 acres of business/industrial uses are pending. Conceptual projects (no formal application on file) have been proposed for a 13-acre roadside commercial development, a 10-acre manufacturing facility, and a 400,000 square foot resort/18-hole golf course development (Eberle, personal communication).

Solano County

Solano County planning staff noted that no significant development was anticipated in unincorporated areas of the southern part of the county. This is confirmed by growth projections for unincorporated areas of the county as reported in the County General Plan (Solano County December 1980, as amended).

Naval Security Group Activity (NSGA) Skaggs Island

NSGA Skaggs Island, located approximately 40 miles northeast of San Francisco in Sonoma County, closed in September 1993 as part of a general downsizing by the Navy and was not a closure determined by the BRAC process. Skaggs Island borders the northern shore of San Pablo Bay, twelve miles east of the city of Sonoma and 6 miles west of Vallejo. The island comprises 4,390 acres, of which the Navy owns approximately 3,310 acres. The property was historically tidal wetlands and is a breeding area and Pacific flyway locale for sensitive bird species, as well as habitat for sensitive plant and animal species. Various reuse alternatives considered for Skaggs Island following disposal by the Navy include a wildlife preservation area, wetlands habitat enhancement and restoration area, and dredge disposal area. The USFWS has indicated an interest in acquiring over 300 acres of open space for

expansion of the San Pablo Bay National Wild Refuge at Skaggs Island. The ultimate disposition of Skaggs Island has not yet been determined, pending completion of the environmental remediation activities. As a non-BRAC closure, the property will be transferred to the General Services Administration for disposal.

City of Vallejo

Vallejo includes Mare Island in its general plan. According to city planning staff, no major cumulative projects are proposed in the city. The recently completed Wilson Avenue realignment project was the only planned or reasonably foreseeable project in the city. The realignment of Wilson Avenue improves circulation to the project area and does not have long-term adverse impacts.

The westbound span of the Carquinez Bridge is proposed for replacement, and the EIS/EIR for this project is in the draft stage. Though the timing of this project has not been determined, it is likely that it would be completed prior to implementing the reuse plan, and would therefore not have overlapping impacts with the reuse plan.

City of American Canyon

The City of American Canyon is in Napa County, just south of the Napa Airport Industrial Area site, and extends south to the City of Vallejo. American Canyon's proposed urban limit line overlaps the southern portion of the Airport Industrial Area. Cumulative development projections for the city indicate that growth of residential uses, as permitted under city general plan policies, will increase from about 3,200 units to about 5,900 units at full buildout. Commercial development is projected to increase from 525,000 square feet to over 1.4 million square feet, and industrial uses will increase from about 1.4 million square feet to about 1.6 million square feet (City of American Canyon 1994).

City of Benicia

The City of Benicia, located in southern Solano County east of the City of Vallejo, does not have individual project cumulative development projections but has developed cumulative growth population projections through 2005, based on Association of Bay Area Governments (ABAG) and State Finance Department growth projections. Total population growth of about 20 percent is projected for the city from 1995 to 2005 (from 30,000 to 36,000 people).

Projects approved or under consideration in Benicia include buildout of the Southampton subdivision that is in its final phase and includes several hundred

housing units, 116 townhouse units under construction in the marina area, and development of several hundred acres known as the Seeno property. The area is zoned industrial and is north of the existing industrial area between Lake Herman Road and Industrial Way.

5.5.2 Mare Island Cumulative Development

State Reversionary Land

A large portion of the former Mare Island Naval Shipyard (approximately 3,629 acres) will revert to the State of California upon Navy disposal (see Figure 1-5). This land is composed primarily of active and inactive dredge disposal areas, wetlands, and submerged lands (see Figure 2-2). The likely reuse scenarios for the state reversionary land are reactivating the dredge disposal areas, allowing the dredge disposal areas to revert to wetlands, and providing recreational uses (Reuse Area 13). Potential impacts of each scenario are discussed in Section 5.5.3.

The ultimate use of the Mare Island dredge ponds will be determined in part through a cooperative regional planning effort conducted by the US EPA, the US Army Corps of Engineers, the Bay Conservation and Development Commission, and the San Francisco Regional Water Quality Control Board. The long-term management strategy (LTMS) being developed by these agencies focuses on reducing the impacts of dredging and dredge material disposal on San Francisco Bay while allowing for continued growth of port facilities.

The LTMS Management Committee recommended the dredge material disposal ponds at Mare Island be retained and evaluated for use as a regional dredge material reuse, rehandling, and contained disposal facility, after remediation has been completed at or around the ponds. A dredge pond feasibility study contracted by the City of Vallejo concluded that the operation of 7 ponds as a confined disposal site for unsuitable material would be the most economically feasible option for Vallejo. The USFWS has requested leasing several ponds from the State Lands Commission for expanding the wildlife refuge and has expressed an interest in 300 acres of land on Skaggs Island. On March 17, 1998, the Vallejo City Council accepted the findings of the dredge ponds feasibility study and concurred with the transfer of dredge ponds 1, 3E, and 3W, some of which are located on state reversionary land, to the USFWS for use as an environmental education and interpretive center.

Federal Agency Transfer Properties

Property and facilities at the former shipyard include approximately 207 acres that have been requested for transfer by 4 Federal agencies—USCG, USFS, USFWS, and US Army. The property to be transferred to these agencies is

located on various areas on Mare Island. The USCG requested an approximately 1-acre site in Reuse Area 12 to maintain and operate a communication tower, consistent with historic use of this site. The USFS requested approximately 8 acres in Reuse Area 9 that includes Building 1324 and associated facilities for use as its regional office, consistent with the historic administrative use of this area. The USFWS requested a transfer of approximately 162 acres that includes wetlands, a portion of dredge pond 3E, and Building 505 to establish an interpretive center and to extend the San Pablo Bay National Wildlife Refuge. The resulting conversion of dredge disposal areas to wetlands would not be consistent with their previous Navy use for disposal of dredge material. The US Army requested a total of approximately 36 acres in Reuse Areas 5, 9, and 10 for development of an Army Reserve Center, consistent with the historic military use of this area.

5.5.3 Cumulative Impacts

The reuse of the former Mare Island Naval Shipyard, in conjunction with other major projects in the region, would result in cumulative impacts to several resources. Some of these impacts, such as socioeconomics, would be beneficial. Other impacts would be fully or potentially offset through the planning process or by developing specific mitigation measures. Potentially significant and not mitigable cumulative impacts have been identified for land use (inconsistency with Bay Plan), biological resources (wetlands), and water resources (dredging). Projected cumulative impacts are described below.

Land Use

Reuse of Mare Island, in conjunction with other cumulative development in the North Bay region, would not result in cumulative adverse environmental land use impacts. The projects identified in the surrounding counties and cities would increase housing, commercial, industrial, and open space available to the public. Disposal and reuse of facilities at the shipyard would be generally consistent with preclosure land uses and would increase property available for private development and use, as well as for public access, thereby offseting some of the cumulative demand for converting raw land to urban uses in the region. Continued use of 7 dredge disposal areas on Mare Island reversionary land, as recommended by the feasibility study and accepted by Vallejo, would be consistent with preclosure uses and with the Bay Plan and LTMS recommendations. The Federal agency property transfers propose reusing existing structures, which would not result in a cumulative land use impact.

Certain reuse options for Mare Island reversionary and Federal property transfer lands while not causing cumulative adverse physical land use impacts, would conflict with existing land use policies. Reuse of the Farragut Village residential units on state reversionary land would not be consistent with the

Tideland Trust. Also, developing the rifle range in Reuse Area 7 would require approval from the State Lands Commission for that portion of the range on state reversionary land.

Reversion of the 10 active dredge disposal ponds, located primarily on state reversionary land, to wetlands or wildlife refuge would conflict with the BCDC's revised Bay Plan. The Bay Plan designates the western portion of Mare Island as water-related industry priority use for retention as possible dredge material disposal or rehandling sites, pending the completion of LTMS plans. The revised Bay Plan further states that 3 of the ponds could be used for habitat purposes, but only if the remaining 7 would be used for dredge material disposal. This noncompliance with adopted plans and policies would be a significant impact of cumulative reuse of state reversionary land and USFWS transfer land. The Vallejo City Council recently adopted a resolution accepting the recommendation that the 7 dredge disposal ponds be used as a confined disposal site for unsuitable material, and concurred with the transfer of the remaining 3 dredge disposal ponds to the USFWS.

Recreation. The USFWS proposes to expand the San Pablo Bay National Wildlife Refuge on Mare Island by developing Building 505, a 22,000 square foot building, into a visitor center with interpretive exhibits and environmental education programs. The USFWS also has expressed an interest in acquiring over 300 acres of open space for expanding the San Pablo Bay National Wild Refuge at Skaggs Island. This would have a beneficial effect on recreational resources in the region.

Socioeconomics

Developing the reuse alternatives, in combination with other proposed or reasonably foreseeable development projects in the region, would generate substantial job opportunities and housing supply. Proposed activities on Federal agency transfer properties would further increase employment at the former shipyard. The increased employment at Mare Island would indirectly create a need for additional support services, which would be a cumulatively beneficial impact. The number of students generated by this employment in combination with other development in the area could cumulatively increase demand for school services over a 25-year period.

The USFWS plans to expand the San Pablo Bay National Wildlife Refuge would have a beneficial economic effect on Vallejo if additional visitors resulted in additional spending within the city. However, reversion of the dredge disposal ponds to wetlands, one of the options currently under consideration on state reversionary land, would make some dredge ponds unavailable for potential economic reuse.

Approximately 70 Farragut Village housing units are on state reversionary land. Their availability for future reuse would depend on agreement between Vallejo and the State Lands Commission.

Reactivating Mare Island dredge disposal areas and developing a regional dredge material handling facility would help to alleviate constraint on the growth of port facilities in the San Francisco Bay Area. Maintaining and enlarging port access is an essential element in attracting and retaining marine industries, and dredge material disposal is a critical link affecting the cost and feasibility of maintaining port facilities.

Public Services

The proposed reuse, including land being transferred to other Federal agencies on Mare Island and proposed uses on state reversionary lands, when added to other projects in the Vallejo area, would increase demands on Vallejo police and fire services. To offset cumulative impacts, Federal agencies on Mare Island should provide for their own public services or enter into an agreement with Vallejo for the city to provide these services. A similar agreement with the State of California for activities on state reversionary lands could be developed if the state does not lease these lands back to the city. It is a policy in the Vallejo General Plan that new developments must pay for the added cost of services they may require.

Cultural Resources

Since publication of the Draft EIS/EIR, several archeological and historic studies on Mare Island have been completed resulting in the identification of the Mare Island Historic District, which has been listed on the National Register of Historic Places (NRHP). The historic district includes all buildings, structures, and archeological sites that meet the criteria for listing in the NRHP (see Figure 3-9). As required by Section 106 of the National Historic Preservation Act (NHPA) and its implementing regulations, the Navy consulted with the SHPO, the ACHP, and Vallejo to find and agree on ways to avoid or mitigate any adverse impacts to cultural resources at Mare Island. The Navy, SHPO, ACHP and Vallejo have executed a Memorandum of Agreement (MOA) that addresses the future use of historic properties on Mare Island.

The MOA considers the Navy's layaway program, interim leases of historic buildings while the Navy retains ownership, and review of undertakings affecting selected buildings after the Navy disposes of them. The MOA requires curating artifacts and field notes from archeological investigations; transferring important records to the National Archives and important historic artifacts to the Naval Historical Center in Washington, DC; recording the

most representative historic buildings; and administrating historic properties after their transfer by Vallejo under the provisions of its historic district ordinance. Historic properties remaining under Federal jurisdiction would continue to be subject to NHPA regulations governing the use of historic properties.

Properties on Mare Island reverting to the State of California would be subject to California historic preservation requirements with respect to state-owned properties that are listed in the NRHP. State of California Executive Order W-26-92, issued in April 1992, mandates that state agencies maintain and preserve, when prudent and feasible, historic properties under their jurisdiction. No state agency may destroy a historic resource under its jurisdiction without first seeking the advice and comments of the SHPO.

Aesthetics and Scenic Resources

Under the reuse alternatives, most structures would be adaptively reused, resulting in minor changes to existing visual resources and therefore not significantly adversely affecting scenic resources. Constructing the southern crossing bridge across Mare Island Strait, proposed under the Reuse Plan Alternative, would introduce a prominent visual structure in the area, which in combination with other proposed development projects would contribute to a cumulative reduction in scenic resources in the project area.

Biological Resources

Cumulative effects to biological resources could result primarily from reuse of surplus land, as proposed under the reuse alternatives, in combination with use of state reversionary land on the island, and activities proposed on Mare Island land being transferred to other Federal agencies. Cumulative impacts also could result from other proposed or reasonably foreseeable projects in the San Francisco Bay Area, such as adding 300 acres of open space to the San Pablo Bay National Wild Refuge at Skaggs Island, proposed by the USFWS. Activities that may impact threatened or endangered species (salt marsh harvest mouse and clapper rail) and sensitive species include reactivating dredge ponds, raising levees, and using Reuse Areas 12 and 13 for recreation. These activities also may impact wetlands (habitat for listed species) and coast live oak, which are considered sensitive habitats.

Cumulative effects to sensitive species that are not listed as endangered or threatened would be considered significant only if the number of individuals in the species affected were large enough so that, in conjunction with other regional projects, the disposal and reuse activities were to assist in or accelerate a decline in the viability of the species as a whole. No cumulative effects are expected to occur to regional nonsensitive habitats or nonsensitive fish and

wildlife species from cumulative development in combination with disposal and reuse activities at Mare Island.

Sensitive Plants. Cumulative impacts to sensitive species could occur under the Reuse Plan Alternative if the southern crossing bridge is constructed in an area protected by a conservation easement. Consultation with USFWS would be required to develop appropriate mitigations for any construction-related impacts. There would be no cumulative impacts to sensitive plant species under the other alternatives. Sensitive plant species on surplus Federal land are within the areas covered by the conservation easements for endangered species protection. The remaining sensitive plant species are on property subject to transfer to the USFWS, US Army or on state reversionary land. Sensitive plant species on state reversionary land are in wetland areas, and no development proposals are known or expected for these areas. No sensitive plant species are known to occur in Mare Island dredge ponds.

Cumulative impacts to Mason's lilaeopsis could result from increased vessel traffic in Mare Island Strait related to operations of the US Army Reserve Center. The additional traffic could damage existing stands of Mason's lilaeopsis by increasing bank erosion and undercutting. Mason's lilaeopsis is listed by the USFWS as a species of concern and by CDFG as rare, and is important because this population is located in the most saline habitat known for this species. Bank undercutting from regular events, such as boat traffic, erodes and reduces available shoreline, which could significantly reduce the plant population over time. Installing shoreline erosion protection structures, such as rock rip rap or floating log booms anchored near the eroding banks would mitigate this impact.

Sensitive Fish and Wildlife. Cumulative activities at Mare Island could affect habitat for the salt marsh harvest mouse and California clapper rail. Approximately 90 percent of the habitat area for these endangered species at Mare Island is on state reversionary lands, with the remaining 10 percent on land being transferred to USFWS and surplus land. If the state, the LRA, or other non-Federal entities propose reactivating the dredge ponds or other action on these lands, these actions could significantly impact these endangered species or their habitat. Similarly, creating new discharge points would be considered a significant impact.

Raising levees to increase dredge pond capacity could reduce habitat for the salt marsh harvest mouse, which would significantly impact the species. During the drying process, the dredge ponds are invaded by pickleweed vegetation and, subsequently, the endangered salt marsh harvest mouse. When this vegetation is removed from the dredge ponds as part of routine maintenance, the salt marsh harvest mouse and its habitat are destroyed. These activities are currently allowed by the 1988 memorandum of understanding (MOU)

between the Navy and USFWS only within the boundaries of existing active dredge disposal ponds that are located on state reversionary land, surplus land, and land subject to transfer to the USFWS.

Vallejo or any other entity proposing to reactivate the dredge ponds must consult with the USFWS to consider modification or replacement of the Navy/USFWS 1988 MOU regarding dredge pond maintenance and endangered species management to allow incidental take of the endangered salt marsh harvest mouse. Vallejo is currently pursuing a feasibility study for using the dredge ponds. The State Lands Commission can, by lease, establish restrictions on how land may be used during a lease. A lease for spoils placement by Vallejo or others on state reversionary lands would include limits on the character of the spoils place, timing of the placement, and restoration of the areas to allow their use as wildlife wetland habitat. In addition, if Vallejo or another non-Federal entity decides to use the dredge ponds, they would be required to initiate an Endangered Species Act, Section 10a, consultation with the USFWS. The resulting "take permit" would likely contain many of the same conditions and mitigations as are present in the 1988 MOU. Additional permits, such as those obtained from the US Army Corps of Engineers (COE) under Section 404 Clean Water Act, also may be required.

Transfer to the USFWS of a portion of pond 3E and possible lease between the USFWS and the California State Lands Commission would preclude reserving ponds 1, 3E, and 3W for future dredge material disposal uses. The USFWS would not activate the dredge ponds in anticipation of possible negative effects on migratory birds due to long drying periods required for the deposited material, operation of heavy equipment, and the potential for deposition of contaminated sediments. After property reversion or transfer, operation of the dredge ponds would require detailed environmental review at the time that those uses are proposed.

Allowing the dredge ponds to revert to wetlands would create approximately 500 acres of additional sensitive wetland habitat, which would provide larger areas for endangered species, such as the salt marsh harvest mouse. Reversion of the dredge disposal areas to wetlands also could reduce shorebird feeding areas. However, there are nearby areas, such as Cullinan Ranch and the San Pablo Bay National Wildlife Refuge, that are used by these species as feeding areas.

Recreational use of Reuse Areas 12 and 13 could result in significant effects on the salt marsh harvest mouse if trails and access routes were not provided to direct visitors around sensitive wetlands and endangered species habitats. Visitors and their pets may trample vegetation and disturb or kill endangered species. Human activity and associated noise can cause a reduction in breeding success of clapper rails. Reestablishing breeding territories for rails is difficult (USFWS 1997). A small portion of Reuse Area 12 is in state reversionary land,

and Reuse Area 13 is entirely within state reversionary land. Construction should be prohibited in wetland areas. The public access plan and predator management and CC&Rs that are included as part of all of the reuse alternatives for surplus land and Mare Island would reduce this impact to a level of nonsignificance.

The proposed expansion of the San Pablo Bay National Wildlife Refuge, including the proposed addition of Skaggs Island lands, would result in improved management for the salt marsh harvest mouse, shorebirds, waterfowl, and native plants. This would be a beneficial impact.

Sensitive Habitats. Degradation or loss of wetlands and coast live oak woodlands would be cumulatively significant because these communities have been severely depleted in the Bay Area over the past 100 years. In addition, recent and historical development has resulted in the loss of approximately 95 percent of tidal marsh areas in the San Francisco Bay and Sacramento-San Joaquin River Delta (Josselyn 1983). The Mare Island marsh habitats, part of the extensive Napa Marsh complex, make up a significant portion of the remaining wetlands in the region. Reactivating dredge ponds on state reversionary land at Mare Island could contribute to the cumulative loss of this habitat. Any further degradation of these communities individually or in combination with any loss of wetlands at other proposed bayfront development areas would be significant in its contribution to the total reduction of wetland areas in the region.

Construction impacts to wetlands should be avoided by implementing practices that do not allow construction or staging in wetland areas and by prohibiting access to wetlands when entering or exiting proposed development areas. All vehicle and pedestrian traffic should be restricted to existing trails and roads. Impacts to wetlands and other waters of the US on surplus land, land being transferred to the USFWS, and state reversionary land would require consultation with and permitting by the COE.

Water Resources

Nonpoint Source Runoff. Reuse of Mare Island surplus lands under the Reuse Plan Alternative, along with Federal transfer lands and reversionary lands, could add incrementally to the cumulatively significant contribution of nonpoint source runoff contaminants to receiving bay waters. The Proposed Action, along with the USCG, USFS, US Army reuse of lands and USFWS use of Building 505, would generate primarily urban type pollutants. USFWS use of a portion of pond 3E as a wildlife refuge would not adversely affect cumulative water quality impacts. This potential cumulative increase in overall contaminant discharge would be mitigated by eliminating stormwater

and sanitary sewer cross-connections and by implementing required NPDES stormwater pollution prevention measures.

Rise in Sea Level. Developing any of the reuse alternatives, in combination with other proposed or reasonably foreseeable development, would add to the cumulative regional exposure of developed property to the potential rise in sea level. The reuse of the Federal transfer lands on Mare Island would incrementally increase this exposure, but the mitigation for the Reuse Plan Alternative (levee improvements, for example) also would apply to, and mitigate, this impact. Reusing reversionary lands for dredge material disposal or wildlife refuge uses in conjunction with the other development at Mare Island would not contribute to this cumulative impact.

Reuse of Dredge Disposal Ponds. Studies prepared in the development of an LTMS for dredge disposal in the San Francisco Bay Area suggest that operating the dredge material disposal ponds at Mare Island as a regional dredge material rehandling facility could accommodate an average of 1.1 million cubic yards annually. If operated as a disposal facility, LTMS studies suggest that the facility could permanently accommodate up to 15.5 million cubic yards, or 5 percent of the regional disposal requirement over the next 50 years.

Dredging and reuse of dredge ponds on state reversionary land could add to cumulative releases of contaminants in the North Bay region associated with disposal of dredge material and decanting dredge water. This water quality impact from dredge material disposal is a cumulatively significant concern in the region. It would be mitigated cumulatively through individual RWQCB waste discharge requirements on dredge water discharges to the bay, consistent with the RWQCB basin plan.

Reversion of Dredge Disposal Ponds to Wetlands. Implementing this option would reduce the cumulatively available dredge disposal capacities in the Bay Area and could affect the continued operation of shipping channels. Loss of Mare Island dredge material disposal sites would require that any dredge material generated by future berthfront dredging be disposed of elsewhere. The magnitude of the impact would depend on the dredging needs of future tenants but could be significant. Lack of suitable upland disposal capacity in the region could increase the cost of dredge material disposal. Water quality effects of contaminated sediments deposited in the ponds also could be significant. However, this would be mitigated by complying with RWQCB and hazardous materials regulations and permits.

Geology and Soils

Regionally, the reuse of the former Mare Island Naval Shipyard, in combination with cumulative development, would add to the number of

people and structures subject to regional seismic hazards but would not contribute to cumulative geologic hazards, soil erosion, or impacts in the ROI. There would be no cumulative geologic effect from the variety of uses proposed for the state reversionary lands or the Federal property transfers.

Traffic and Circulation

Overall regional growth in the San Francisco Bay Area, including the projects identified for each of the counties and local jurisdictions, would generate traffic volumes that would exceed capacities of I-80 and SR 37, the primary regional roadways serving the project area. The contribution of the reuse alternatives traffic volumes to cumulative traffic would be less than preclosure traffic volumes and would therefore not be a significant contributor to cumulative traffic volumes.

Although planning studies have identified the need for improvements to I-80 and SR 37 to accommodate the increased volumes, such improvements have not been proposed for funding. Without further widening I-80 to 8 lanes and SR 37 east of Mare Island to 6 lanes and west of Mare Island to 4 lanes, the peak period rush hour would most likely lengthen as commuters leave work earlier or later to avoid the severe commute hour congestion. Assembly Bill 719 limits expansion of SR 37 to 4 lanes between the east side of the Napa River Bridge to Diablo Street east of SR 29. Future upgrades to these highways would require funding from the Federal Highway Administration (FHWA).

Construction of the southern crossing bridge, proposed under the Reuse Plan Alternative, could alleviate some congestion through Vallejo since it would function as a bypass to the SR 37 connection to I-80. This project would require participation from FHWA and the California Department of Transportation (Caltrans), along with many other environmental resource agencies. Caltrans jurisdictional interest could extend to the proposed southern crossing bridge, including connections and impact to any state or Federal facility (e.g., I-80 and I-780). If the southern crossing were designated as a route of regional significance or as a state highway, Caltrans would have primary jurisdiction over the design, construction, and maintenance of the facility.

Air Quality and Meteorology

For air quality, the cumulative ROI is the San Francisco Bay Area. The project and other major development in the region would contribute traffic to the local and regional transportation system, thereby contributing to the cumulative air quality emissions in the Bay Area. The contribution of the project traffic to these increases would not be significant when compared to

preclosure conditions. Cumulative air quality issues in the San Francisco Bay Area are addressed through regional air quality plans developed jointly by BAAQMD, ABAG, and MTC. These plans reflect anticipated regional land use and transportation patterns. BAAQMD regulations require most new industrial facilities to fully offset emissions generated by their operations.

The BAAQMD believes that current air quality programs have achieved and will maintain the Federal ozone and carbon monoxide standards in the Bay Area under anticipated development patterns. Current plans are subject to periodic review and revision to ensure that state ozone standards also will be achieved. The carbon monoxide dispersion modeling results presented in Section 4.10 were based on cumulative traffic for the buildout time frame. Those analyses do not indicate any future carbon monoxide problems under cumulative traffic conditions.

Noise

The proposed reuse alternatives would contribute traffic to the local and regional transportation system, thereby contributing to the cumulative noise level in the ROI. However, traffic generated by the reuse alternatives would be less than that generated during preclosure conditions and would therefore not contribute significantly to cumulative noise levels. Transfers of land to other Federal agencies and reversion of land to the state would not result in substantial increases in noise levels at Mare Island or in the surrounding community.

Utilities

Reuse of Mare Island in conjunction with other regional and on-island projects would result in increased demand for utility services. Cumulative effects to solid waste or landfill capacity are not expected to be significant since area solid waste is handled through a transfer station and does not rely on a particular landfill's capacity. In addition, transfer of surplus property at Mare Island incorporates that property into Vallejo's region of influence and therefore incorporates the island into the city's plan for meeting solid waste reduction goals. There may be cumulative effects to the Vallejo sanitary waste treatment plant if demand is greater than the plant capacity. Vallejo policies requiring new developments to pay for the additional cost of providing services should offset any potential impacts. Federal agencies to whom Mare Island property is being transferred and state agencies conducting activities on any state reversionary lands not leased to the city or others would need to coordinate with the city or area utility suppliers to provide utilities services.

Hazardous Materials and Waste

The Navy will remediate all known contaminated areas at Mare Island in accordance with applicable regulations. The cleanup of hazardous substances on Mare Island would have a beneficial impact on the regional environment and would not contribute to cumulative use and disposal of hazardous substances in the region. Land transfers to other Federal agencies and reversions of other land to the state will not result in cumulative hazardous materials and waste impacts.

5.6 ENVIRONMENTAL JUSTICE

On February 11, 1994, President Clinton issued Executive Order 12898 on Federal Actions to Address Environmental Justice in Minority and Low-income Populations, 59 Fed. Reg. 7629 (1994). This order requires that "each Federal agency shall analyze the environmental effects, including human health, economic and social effects, of Federal actions including effects on minority communities and low-income communities, when such analysis is required by NEPA. Mitigation measures outlined or analyzed in an environmental assessment, environmental impact statement, or record of decision, whenever feasible, should address significant and adverse environmental effects of proposed Federal actions on minority communities and low-income communities. This section addresses the potential environmental impacts from disposal and reuse of Mare Island on minority communities and low-income communities.

In order to comply with Executive Order 12898, this EIS/EIR included the following actions:

- Gathering economic, racial, and demographic information generated from the 1990 census to identify areas of low-income and high minority populations in the vicinity of areas potentially exposed to project impacts;

- Assessing the disposal and reuse actions for disproportionate impacts resulting from on-island activities, and off-island activities associated with reuse of the Roosevelt Terrace housing, the proposed southern crossing, and use of the railroad spur; and

- Encouraging community participation and input through public hearings and meetings and extensive public notification, as described in Chapter 1 of this document.

Analysis Methodology

To determine whether low-income and minority populations could be disproportionately affected by the reuse of the former Mare Island Naval Shipyard, the general location of low-income and minority populations was determined, using census data followed by the identification of reuse actions that could affect these populations. Then the overall impact of reuse actions to those identified low-income and minority populations was considered, focusing impacts to specific low-income and minority neighborhoods within the region of influence (ROI). For example, the long-term overall economic effects of the proposed reuse action would be positive to Vallejo, including minority and specific low-income populations, while reuse related impacts on land use, noise, air quality and traffic in low-income and minority neighborhoods could be adverse.

Establishing the Region of Influence. Napa and Solano counties encompass the region of influence for consideration of environmental justice impacts. Traffic would be the only reuse impact that could affect this larger region through the traffic volumes that would be generated along the regional roadway corridors. Because of the diversified populations and income groups living adjacent to the regional highways affected by reuse of Mare Island, traffic volumes along these highways would not disproportionately adversely impact low-income or minority populations living near these highways.

Regional traffic impacts from reuse would occur on I-80, an interstate transportation corridor traveling through California, and State Route 29, a regional connector from Vallejo through Napa County. I-80 and State Route 29 are bordered by many diverse communities with varied population and income levels. Because of the regional character of these transportation facilities, the range of communities that use these facilities and the small contribution of traffic generated by Mare Island to these corridors, traffic impacts from the proposed disposal and reuse action were not considered to disproportionately affect minority and low-income populations

The City of Vallejo has been established as the primary ROI for analyzing environmental justice issues because the nature of the impacts associated with disposal and reuse of Mare Island would occur primarily at the local or neighborhood level. In other words, minority and low-income populations in communities outside Vallejo would not be directly affected by reuse activities on-island, uses of the Roosevelt Terrace housing complex, noise and safety impacts relating to the use of the railroad spur, or displacement, noise, or traffic issues resulting from implementing the southern crossing. Moreover, the overall city population also would not be affected by these potential impacts, as the actions would be confined to the immediate vicinities of the proposed facilities and uses. For this reason, detailed impact analysis focuses

on the specific census tracts adjacent to Mare Island, Roosevelt Terrace, the railroad spur, and the proposed southern crossing site.

Identifying Affected Populations. To determine whether a low-income or minority population could be disproportionately affected by the proposed reuse of the shipyard, the relationship of potential adverse impacts identified in the EIS/EIR to low-income and minority populations was considered, as well as the overall impact of the reuse actions to nearby low-income and minority populations. Census tract data was used to identify low-income and minority populations in Vallejo. Minority populations included in the census are identified as Black, American Indian, Eskimo or Aleut, Asian or Pacific Islander, and Hispanic.

Identification of Environmental Justice Reuse Impacts. For Mare Island, issues of environmental justice are associated primarily with off-island issues of noise, air quality, traffic, land use conflicts, and community disruption. Geologic and hydrologic issues are not relevant because hazards associated with those conditions (e.g., flooding and seismic hazards) in the reuse areas could not disproportionately affect any one group. Likewise, hazardous materials issues would not disproportionately affect any one group, and existing regulations would ensure a safe condition prior to property transfer and reuse. The only biological impacts of potential significance would be impacts to certain special status species. Loss of these species would not disproportionately affect any one group. Similarly, loss of historic resources would not affect any one ethnic or income group.

The primary significant impact identified in the EIS/EIR that could affect low-income and minority populations was construction of the southern crossing as proposed under the Reuse Plan Alternative. Redeveloping the off-site Roosevelt Terrace housing would be an overall beneficial impact of the reuse plan and would occur in an area of Vallejo strongly represented by low-income and minority populations. Continuing use of the rail spur would not disproportionately affect low-income and minority populations.

City of Vallejo Minority and Low-income Characteristics

Vallejo has a diverse ethnic population (Table 3-11). Based on 1990 census data, 50 percent of the city's population is Caucasian, 21 percent is Black, 19 percent is Filipino, 4 percent is other Asians and Pacific Islanders, and the remaining 6 percent is composed of other groups. Of the total city population, persons of Hispanic origin make up 10 percent; persons of Hispanic origin can be of any race.

Approximately 9,000 residents, or 8 percent of the city's population, have been classified as living in poverty (1990 Census). The Census Bureau determines

poverty status for families and individuals based on 48 threshold variables, including income and amount spent on food, family size, number of children under 18, and number of family members over 65. The average poverty threshold for a family of 4 was $12,674 in 1989. Of the 9,000 residents classified as poor, Blacks, American Indians/Eskimo/Aleutians, and Hispanics are disproportionately represented in Vallejo. In addition, over 36 percent of poor residents in the city are Black, while total Black population in the city is only 21 percent. Therefore, Blacks also are overrepresented in the city's poor population.

5.6.1 On-Island Impacts

Because of the island's isolation from nearby established communities, disposal and reuse of the on-island portions of Mare Island would not adversely affect poor or minority communities. Conveying surplus on-island properties and facilities to the city of Vallejo or other non-Federal entity could benefit low-income and minority populations by providing housing and job opportunities.

5.6.2 Off-Island Impacts

Three specific activities associated with the Reuse Plan would occur in areas containing high percentages of low-income and minority populations—developing the Roosevelt Terrace Housing Complex, constructing the southern crossing bridge, and reusing the railroad spur right-of-way. The potential effects of these actions on these populations are described below. According to the socioeconomic impacts analysis in this document, the long-term overall economic effects of the proposed reuse action would be positive to the city as a whole, including minority and low-income groups. Therefore these groups would not be adversely affected on a citywide basis.

Roosevelt Terrace Housing Complex

The Vallejo Heights neighborhood next to the Roosevelt Terrace Housing Complex (census tract 2517.02) has a population of over 3,000 people and a high percentage of persons below the poverty level, as indicated in Table 5-1.

This neighborhood has a slightly higher than citywide Black population (24 percent versus 21 percent) and American Indian, Eskimo, Aleutian population (1.4 percent versus 0.8 percent). Approximately 613 persons, or 20 percent of the neighborhood's population, are living below the poverty level, compared to 8 percent below the poverty level citywide.

TABLE 5-1
DEMOGRAPHIC INFORMATION FOR ROOSEVELT TERRACE

Census Tract	% Below Poverty Level	Hispanic (%)	Black (%)	American Indian (%)	Asian (%)	Average Family Income
2517.02	20	—	24	1.4	—	—
City of Vallejo	8	10.3	21	0.8	23	$36,600

Source: US Census 1990

Under the reuse alternatives, the Roosevelt Terrace housing complex would be redeveloped to provide affordable family housing. The impact of any housing on the surrounding neighborhood would be influenced by the mix of units, the amount of rehabilitation to the existing structures and the security of the units. The reuse of Roosevelt Terrace as affordable housing would most directly affect the neighborhood; however, its effect would not be considered adverse.

Southern Crossing Area

The impact of the southern crossing bridge on low-income and minority populations in the South Vallejo neighborhood would depend on the location of the bridge. Potential adverse impacts would be avoided by locating the corridor in commercial or industrial areas and circumventing existing residential areas of this neighborhood. These factors will be taken into consideration when planning the future location of the southern crossing bridge.

Constructing a southern crossing between Mare Island and Vallejo would most immediately affect residents of Vallejo living in census tracts 2507.01 and 2507.02 that are part of the South Vallejo neighborhood. The census data for these 2 tracts indicates substantially higher percentages of Black residents, a somewhat high percentage of Hispanics, and poverty levels substantially above the citywide average (Table 5-2). Approximately 486 persons, or 16 percent of the population of tract 2507.01 and 261 persons, or 10 percent of the population in tract 2507.02, live below the poverty level, compared to 8 percent citywide. Therefore, project impacts in this area could affect minority and poor communities in this area.

The issues of concern to this area would be land use, noise, traffic, and air quality impacts. Constructing the southern crossing could result in demolishing or relocating structures within and adjacent to the proposed

TABLE 5-2
DEMOGRAPHIC INFORMATION NEAR SOUTHERN CROSSING

Census Tract	% Below Poverty Level	Hispanic (%)	Black (%)	American Indian (%)	Asian (%)	Average Family Income
2507.01	16	13.1	40	—	—	—
2507.02	10	—	37	—	—	—
City of Vallejo	8	10.3	21	0.8	23	$36,600

Source: US Census 1990

bridge right-of-way, which would substantially alter land use patterns and displace residential and commercial communities. Construction noise and demolition associated with the southern crossing could disrupt and physically divide the community if not mitigated. Construction also would generate dust, impacting air quality in the area. Traffic through the area would increase following completion of the bridge.

The significance of changes in land use patterns, air quality, or construction noise would depend on the exact location of the southern crossing. Construction noise and demolition would be considered significant impacts if located in residential areas. Site-specific mitigation measures would be determined when a specific southern crossing design is developed. The EIS/EIR noise analysis recommends locating the Vallejo access to the southern crossing in an industrial area accessed by Solano Avenue. This would eliminate the need to conduct construction and demolition activities in a residential neighborhood. It also would provide several options for traffic flow east, north, and south of the crossing, thereby reducing the traffic levels and noise and air quality impacts associated with that traffic in the surrounding low-income and minority residential areas.

As described in Chapter 4 of the EIS/EIR, certain impacts of the southern crossing would be significant and not mitigable, although careful siting and implementation of other mitigation strategies would reduce the impact. The area of concern, at the Vallejo landing of the southern crossing, is primarily private property.

The Medium Density, Open Space, and No Action Alternatives would not include the southern crossing bridge and therefore would not generate this potential impact.

Railroad Spur Area

Under the Reuse Plan Alternative, an existing railroad spur would continue to be used. The rail line crosses the Mare Island Strait via the Mare Island Causeway and extends through Vallejo to a connection with another rail line. The primary concern with the rail spur activity would be the continued safety near the Vallejo Heights neighborhood elementary school and adjacent residential neighborhoods. Use of the rail spur would increase marginally over preclosure shipyard conditions, representing a nonsignificant impact to low-income and minority populations. To reduce the safety concerns, it is recommended that signs be posted adjacent to the right-of-way stating that it is private railroad property and that trespassing is prohibited.

The neighborhoods adjacent to the right-of-way, including the Vallejo Heights neighborhood, are composed of census tracts 2515, 2516, 2517.01, and 2518.02. Census data summarized in Table 5-3 below indicates that these tracts have Black populations slightly higher than citywide (average of 23 percent versus 21 percent for the city as a whole) and substantially higher American Indian and Hispanic populations. The average incomes of residents in these census tracts also are substantially below the citywide mean, with incomes in tract 2518.02 being only 62 percent of that mean. Tracts 2515 and 2516 also have higher than average populations living below the poverty level.

TABLE 5-3
DEMOGRAPHIC INFORMATION NEAR RAILROAD SPUR

Census Tract	% Below Poverty Level	Hispanic (%)	Black (%)	American Indian (%)	Asian (%)	Average Family Income
2515	20	16	23	0.9	11	$28,207
2516	18	16	25	1.5	12	$32,823
2517.01	11	13.1	24	1.5	9.5	$32,384
2518.02	14	10.6	16	1.0	7.2	$22,824
City of Vallejo	**8**	**10.3**	**21**	**0.8**	**23**	**$36,600**

Source: US Census 1990

Rail use under the Medium Density and Open Space Alternatives would be less than use under the Reuse Plan Alternative, which would represent a decrease in use from preclosure shipyard conditions. Thus, the rail use would insignificantly affect these low-income and minority populations.

The No Action Alternative would result in minimal use of the rail spur and when compared to preclosure rail use, would have no affect on the low-income and minority populations in this area.

5.7 PROTECTION OF CHILDREN FROM ENVIRONMENTAL HEALTH RISKS AND SAFETY RISKS

Executive Order 13045, Protection of Children from Environmental Health Risks and Safety Risks, states that each Federal agency shall (1) make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children, and (2) ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks. Environmental health risks and safety risks mean risks to health or safety that are attributable to products or substances that the child is likely to come in contact with or ingest.

The potential for disproportionate health and safety impacts to children was evaluated at locations with probable high concentrations of children, such as schools, day care centers, recreation areas, and residential areas. Proposed locations of these areas in the reuse plan are indicated on Table 2-1, in Chapter 2 of this document. The ROI for this analysis included the former Mare Island Naval Shipyard property, including Roosevelt Terrace.

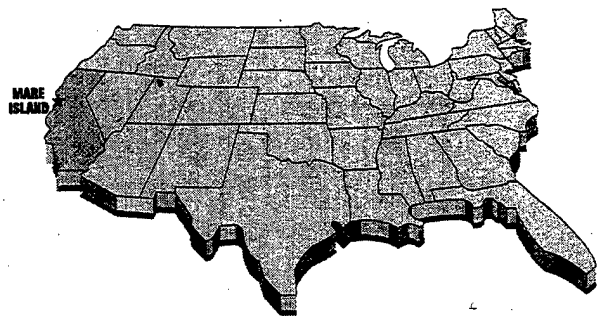
Disposal actions would not disproportionately affect children. Prior to real property conveyance, the Navy would remediate hazardous substances and investigate and remove contamination to a level consistent with the protection of human health and the environment. Future property recipients will be advised and notified of the levels of remediation achieved and where appropriate, covenants, conditions, or restrictions may be included in the deed to ensure protection of human health and the environment.

Under the No Action Alternative, activities at Mare Island would be limited to caretaker functions and interim leasing. Children would not be disproportionately exposed to health and safety risks by either of these activities. As shown in Appendix K, current interim leases at Mare Island are comprised of primarily light industrial, commercial, and heavy industrial uses. Only 2 leases represent activities where children would be present: the elementary school and day care center. The school and day care center buildings were previously used for administrative or education purposes and are located away from industrial and commercial uses.

Under the reuse alternatives, the largest concentrations of children would be present in the proposed residential, educational, and recreational areas of the island and at Roosevelt Terrace located off-island. Prior to property conveyance the Navy will remediate hazardous substances and investigate and remove contamination to a level consistent with the protection of human health and the environment. Roadway improvements proposed by the reuse plan would improve safety for all persons on Mare Island from risks associated

with automotive traffic. The EIS/EIR further recommends removal of the rifle range from Mare Island to mitigate heath and safety impacts associated with this proposed reuse. Other additional measures in the EIS/EIR mitigate health and safety concerns related to transportation (truck traffic), air quality (construction impacts), and noise (construction impacts). Implementation of these measures would further reduce potential health and safety risks to all persons living or working on Mare Island, including children.

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6.0 CONSULTATION AND COORDINATION

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6. CONSULTATION AND COORDINATION

6.1 REPORT PREPARATION

The following parties were contacted during EIS/EIR preparation.

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Dale Pierce
Michael Thabault

California Department of Finance

Jay Malson
Rich Lovelady

California Department of Fish and Game

Deborah McKee (Sacramento)
Fred Botti (Yountville)
Kevin Shaffer
R. Bitman

California Division of Mines and Geology

E.W. Hart

California Department of Transportation

Jim De Luca

California Employment Development Department

Idell Wedemeyer
Tom Bates

Governors Office of Planning and Research

Dara Wheeler

National Marine Fisheries Service

Gary Stern

Association of Bay Area Governments

Patricia Perry

Bay Area Air Quality Management District

Public Information Section

Northern Solano County

Board of Realtors

San Francisco Bay Conservation and Development Commission

Steve McAdam

San Francisco Regional Water Quality Control Board

G. Casorca

San Francisco State University

Peggy Fiedler
Randy Zeball

Solano and Napa County

Board of Realtors

Sonoma State University

Leigh Jordan

Lawrence Berkeley Laboratory

P. Williams

Fehr and Peers Traffic Consultants

Jerry Walters
Vincent Chang

First Hospital of Vallejo

Marvala Fields

Kaiser Medical Center

Laurie Richardson
Steve Graham

Krystal Property Management

George Weaver

Napa-Solano Audubon Society

Robin Leong

Sutter-Solano Medical Center

Julie Rosette

Solano County Jail

Paulette Duclair

Tipp Realty

Ruth Walsh

6.2 SCOPING

The following parties provided comments during the scoping process.

Elected Officials

Assemblyman Tom Hannigan
Assemblywoman Valerie K. Brown
Congressman's George Miller
Congressman Dan Hamburg
Congressman Vic Fazio
Mayor Anthony Intintoli, City of Vallejo
Mayor Tom Orlando, City of American Canyon
Senator Barbara Boxer
Senator Dianne Feinstein
Senator Mike Thompson

Federal Agencies

United States Department of the Interior, National Park Service (Western Region)
United States Fish and Wildlife Service

State Agencies

California Department of Fish and Game
California Department of Transportation
California Office of Planning and Research
California State Lands Commission
Metropolitan Transportation Commission

Local/Regional Agencies

Napa County Conservation, Development and Planning Department
Solano County Department of Environmental Management, Environmental Health Division
Vallejo City Unified School District
Solano County Mosquito Abatement District
Vallejo Heights Neighborhood Association
Hillcrest Park Homeowners Association
Napa Solano Audubon Society

Organizations

Arms Control Research Center
Bay Conservation and Development District, North Bay Management Program
Citizens for Responsible Growth
Restoring the Bay Campaign
Save San Pablo Baylands

Individuals

Mr. Diji Christian
Ms. Cathy Ann Hewitt
Ms. Diana Krevsky
Ms. Arlee Monson
Mr. Bill Morrison
Mr. William Nystorm
Mr. John Osborne
Ms. Patricia Patrick
Ms. Paula Tygielski, RAB member
Mr. Kirk Gohre, RAB member
Mr. Burle Southard, RAB member
Mr. Robert Brekke

6.3 DRAFT EIS/EIR

The following parties submitted comments on the Draft EIS/EIR.

Federal Agencies

United States Coast Guard
United States Environmental Protection Agency
United States Department of the Interior, Pacific West Area, National Park Service
United States Department of the Interior, Office of the Secretary, Office of Environmental Policy and Compliance
United States Department of the Army, San Francisco District, Corps of Engineers
United States Department of Commerce, National Oceanographic and Atmospheric Administration, National Marine Fisheries Service

State Agencies

California State Lands Commission
California Department of Transportation
California Department of Toxic Substances Control

Local/Regional Agencies

San Francisco Bay Conservation and Development Commission
California Regional Water Quality Control Board
Vallejo City Unified School District
Western Regional Office, National Trust
Napa - Solano Audubon Society
Solano County Farmlands and Open Space Foundation

Individuals

Mr. Blair Duque
Mr. Donald E. Babb, Vallejo
Ms. Diana Krevsky, Vallejo
Mr. Neil Havlik
Mr. John Osborne
Mr. William Johnson
Mr. Burle Southard

6.4 DRAFT EIS/EIR DISTRIBUTION LIST

Title	Last	First	Organization	Branch
Elected officials				
Mr.	Tucker	David	Assemblyman Hannigan's Office	
Mr.	Berenguer	Ike	Assemblywoman Brown's Office	
Mayor	Mahanay	Rick	City of American Canyon	
Mayor	Ciarrocchi	Ernie	City of Benecia	
Mayor	Erickson	Don	City of Dixon	
Mayor	Hammond	Chuck	City of Fairfield	
Mayor	Rubier	Jerry	City of Rio Vista	
Mayor	Spering	Jim	City of Suisun City	
Mayor	Fleming	David	City of Vacaville	
Mayor	Intintoli	Anthony	City of Vallejo	
Vice Mayor	Hicks	Foster	City of Vallejo	
Councilmember	Exline	Gloria	City of Vallejo	
Councilmember	Higgins, Jr.	Jack	City of Vallejo	
Councilmember	Boschee	Rod	City of Vallejo	
Councilmember	Villanueva	Cris	City of Vallejo	
Councilmember	Patchell	Bill	City of Vallejo	
			Congressman Rigg's Office	
Mr.	Morley	Kevin	Congressman Fazio's Office	
Ms.	Hoffman	Kathy	Congressman Miller's Office	
Supervisor	Ferriole	Vince	Napa County	
Supervisor	Rippey	Mike	Napa County	
Supervisor	Kondylis	Barbera.	Solano County District 1	
Supervisor	Schlenker	Ed	Solano County District 2	
Supervisor	Gojkovich	Gordon	Solano County District 3	
Supervisor	Carroll	Bill	Solano County District 4	
Supervisor	Thomson	Skip	Solano County District 5	
Mr.	Hass	John	Senator Boxer's Office	
Mr.	Lowe	Russell	Senator Feinstein's Office	
Mr.	La Faille	Tom	Senator Thompson's Office	
Federal Agencies				
	Director	Regional	Federal Emergency Management Agency	Region IX
Manager	Radke	Betsy	San Francisco Bay National Wildlife Refuge	
			General Services Administration	Office of Public Bldgs & Real Property
Chief, Northern Branch	Cah	Dianne	General Services Administration	Office of Real Estate Sales (90R)
Director			Office of Environmental Affairs	
Chief of Planning, Grants, & Env. Qual.	Murray	Ray	US Dept of the Interior	National Park Service
	Albright	Stanley	U.S. Dept of the Interior	National Park Service
	Klimas	Denise	US Dept of Commerce	NOAA
	Engineer	District	US Army Corps of Engineers	Attn: CESPK-PM-M
Dr.	Lerner	Richard	US Army Corps of Engineers, SF Branch	Environmental Branch, (CESP-CF-R)
	Dempsey	Paul	US Dept of Defense	Office of Economic Adjustment
	Ryeff	Paul	US Dept of Defense	Office of Economic Adjustment
	Hoops	George	US Dept of Education	Federal Real Property Assistance Program
	Port	Pat	US Dept of the Interior	Office of Environmental Policy and Compliance
	Env. Section	Chief,	US Dept of the Interior	Bureau of Indian Affairs

Title	Last	First	Organization	Branch
	Hestey	Ed	US Dept of the Interior	Bureau of Land Management
	Hydrologist	Regional	US Dept of the Interior, USGS	Water Resources Division
	Representative	Director's	US Dept of the Interior, USGS	
	Patak	Thomas	US Dept of Transportation	
	Mittlehotz	Ken	US Environmental Protection Agency	Office of Federal Activities
Ms.	Hill	Esther	US Environmental Protection Agency, Region IX	Code H-9-2
	Farrel	David	US Environmental Protection Agency, Region IX	Environmental Review Section (E-3-1)
	Huetteman	Tom	US Environmental Protection Agency, Region IX	
	Tomsovic	David	US Environmental Protection Agency, Region IX	Office of External Affairs
	Aceituno	Mike	US Fish & Wildlife Service	Ecological Services
	Haas	James	US Fish & Wildlife Service	Ecological Services
	Esparantz	John	US Fish & Wildlife Service	Refuge Division - Third Floor
	Lozano	Leo	US Coast Guard	NLCP(SP)
		Officer In Charge	USCG Station Mare Island	Attn: MK-2Fouse
	Medlin	Joel	US Fish & Wildlife Service	Ecological Services
	Osugi	Cathy	US Fish & Wildlife Service	Realty Division (ARW-RE)
District Director	Ilchert	David	US Immigration and Naturalization Service	Appraisers Building
	Exter	Liz	US Forest Service	Pleasant Hill Engineering Center
			Navy	
Commander	Becker, USN	John	Base Closure Officer	Mare Island Naval Shipyard, Code 100B
Base Transition Coordinator	Kelly	Dennis	Mare Island Naval Shipyard	Code 100B
Mr.	Wolf	Richard	Mare Island Naval Shipyard	Code 105.1
Mr.	Ruzicska	Joe	COMNAVBASE San Francisco	Building 1
Mr.	Tuttle	Paul	Alameda Reuse and Redevelopment Authority	Naval Air Station
			Naval Facilities Engr Command	Attn: Sam Rosenblatt (Code 60A1)
Mr.	Muslin	Dan	Southwest Division	Naval Facilities Engineering Command, Code 232
Mr.	Ivins	Gordon	Naval Facilities Engineering Command	Code 92
Chief of Naval Operations			Facilities and Engineering Command (N44E)	
Director			D01	Office of Environmental Affairs
Mr.	Logar	Richard	Mare Island Naval Shipyard	Code 106.4, Stop T-56
Ms.	Bianco	Peggy	Naval Sea Systems Command (Code 074)	CPS Room 680
			Naval Sea Systems Command (SRA 08)	
			Naval Sea Systems Command (REA 07)	Radiological Affairs Support Office
Captain	Cavendar, USN	John	Mare Island Naval Shipyard	Code 100
			State Agencies	
Assoc Exec Dir, Govt Affairs	Ruffolo	Jennifer	SF Bay Conservation & Dev Commission	
Executive Director	Travis	William	SF Bay Conservation & Dev Commission	
Director	Boyd	James	CA Air Resources Board	Stationary Sources

Title	Last	First	Organization	Branch
			CA Dept of Boating & Waterways	
			CA Dept of Conservation	Div of Mines & Geology
	Trott	Ken	CA Dept of Conservation	Office of Land Conservation
	Hunter	Brian	CA Dept of Fish & Game	NW Region 3
	Phillips	Pete	CA Dept of Fish & Game	Environmental Services Div.
	Wickizer	Douglas	CA Dept of Forestry	
	Hsu	Steve	CA Dept of Health Services	Radiological Health Dept
	Pierce	Ken	CA Dept of Parks & Recreation	Resource Management Division
Sr. Trans Engr	DeLuca	Jim	CA Dept of Transportation	District 10
Chief	Erwin	Edwin	CA Dept of Transportation	Transportation Planning, Branch A
	Barrie	Terry	CA Dept of Transportation	Transportation Planning
Branch Chief	Forsen	Ace	CA Dept of Transportation, District 4	Transportation Planning Branch, 14th Floor
	Pettit	Walt	CA Dept of Water Resources	
	Peebler	Diana	CA Environmental Protection Agency	Dept of Toxic Substance Cntl, Office of Military Facilities
			CA Environmental Protection Agency	
Mr.	Gribble	Chip	CA Environmental Protection Agency	Dept of Toxic Substance Cntl
			CA Office of Emergency Services	
	Chiaritti	Mike	CA Office of Planning & Research	
	von Ibsch	Ernie	CA Public Utilities Commission	Safety and Enforcement Division
	Adams	John	CA Regional Water Quality Cntl Brd	Land Disposal Section
	Gansbury	Tom	CA Regional Water Quality Cntl Brd	Basic Planning Unit
	Kathuria	Gina	CA Regional Water Quality Cntl Brd	
Project Manager	Hayes	David	CA State Coastal Conservancy	
CA State Historic Preservation Officer	Widell	Cherilyn	CA State Historic Preservation Office	
	Plummer	Dave	CA State Lands Commission	Div of Research & Planning
Chief	Sekelsky	Jane	CA State Lands Commission	Div of Land Management
Mr.	Berry	Robert	CA Trade and Commerce	
	Nagle	Thomas	Coastal Area Information Group	Employment Development Dept
	Brittle	Chris	Metropolitan Transportation Commission	
	Roddin	Marc F.	Metropolitan Transportation Commission	
	Johnson	Bill	Native American Heritage Commission	
	Langenthal	Josh	SF Bay Regional Water Quality Cntl Board	
	Wheeler	Douglas	The Resources Agency	
Local Agencies				
	Maroney	David	Architectural Heritage Commission	
	Perry	Patricia	Assoc of Bay Area Governments	
Supervising Environmental Planner	Mussen	Irwin	Bay Area Air Quality Management District	
Planning Director	Emlen	Bill	City of American Canyon	
Planning Director	Bunch	John	City of Benicia	Planning Dept

Title	Last	First	Organization	Branch
Director	Louie	James	City of Dixon	Community Development Dept.
Director	Daugherty	Bill	City of Fairfield	Dept of Planning
Director	Yost	John	City of Napa	Dept of Planning
Planning Director	Wandry	Kurt	City of Rio Vista	Dept of Planning
Planning Director	Bland	Tom	City of Suisan	Dept of Planning
Community Development Director	Warner	Greg	City of Vacaville	Community Development Dept
Planning Commissioner	Evans	Richard	City of Vallejo	
Planning Commissioner	Sultan	Mohsen	City of Vallejo	
Planning Commissioner	Jackson	Jimmie	City of Vallejo	
Planning Commissioner	Walker	Betty	City of Vallejo	
Planning Commissioner	Capello	Janet	City of Vallejo	
Planning Commissioner	Cullen-Payne	Candice	City of Vallejo	
Planning Commissioner	Schivley	Joanne	City of Vallejo	
Community Development Director	de Silva	Alvaro	City of Vallejo	
Water Superintendent	Gandling	Ex	City of Vallejo	
Police Chief	Nichelini	Robert	City of Vallejo	Police Dept
Program Manager	Hollingsworth	Gil	City of Vallejo	Mare Island Conversion Division
City Engineer	Leach	Gary	City of Vallejo	Public Works Dept
Public Works Director	Duane	John	City of Vallejo	Public Works Dept
Fire Chief	Magliocco	Steve	City of Vallejo	Fire Dept
City Manager	Graham	Walter	City of Vallejo	
City Manager	Powers	John	City of Vallejo	
Director	Merideth	Ann	City of Vallejo	Development Services Department
Executive V.P.	White	Bob	City of Vallejo	Chamber of Commerce
Community Development Director	Bragdon	Harvey	Contra Costa County	
G.M.	Beardsley	Dennis	Greater Vallejo Recreation District	
Commissioner	Fierro	Albert	Housing & Redevelopment Commission	
Director	Redding	Jeffrey	Napa County	Dept of Planning
	Deweerd	Donna	Napa County	Employment Training Office
Executive Director	Pieper	Angie	Napa Valley Economic Development Corp.	
Manager	McGrath	Jim	Port of Oakland	Environmental Department
President	McKnight	Willie	Solano Community College Board	
President	Dawson	Matthew	Solano County Black Chamber of Commerce	
	Beebe	Dennis	Solano County	Mosquito Abatement District
Resource Dev. Director	McWood	Peggy	Solano County	Economic Opportunity Comm
President	Sunga	Hermie	Filipino American Chamber of Commerce of Solano County	
President	Kim	William	Solano County Korean Chamber of Commerce	
President	Cosme	Manuel	Solano/Napa Hispanic Chamber of Commerce	

Title	Last	First	Organization	Branch
	Rowe	Donald	Solano County	Health & Social Services
Director	Taylor	John	Solano County	Dept of Env. Management
	Perez	Miles J.	Solano County Dept of Environmental Management	Environmental Health Division
	Repanich	Norman	Solano Economic Development Corp.	
Facilities Director	Browning	Ethan	Vallejo City Unified School District	
Executive Director	Sharp	Meme	Vallejo Convention & Visitors Bureau	
Engineer/Manager	Hoehn	Michael	Vallejo Sanitation & Flood Control District	
			Organizations	
	Miller	J. T.	AFL-CIO Central Labor Council	
			Aquatic Habitat Institute	
	Bloom	Saul	Arms Control Research Center	
			Asian Immigrant Workers Advocates	
			Asian Pacific Environmental Network	
Ms.	Johnck	Ellen	Bay Planning Coalition	
Ms.	Pangborn	Brenda	Bridgeport Property Owners Association	
			CA Council for Env. and Econ. Balance	
			CA Environmental Trust	
			CA Native Grass Association	
			CA Network for a New Economy	
President	Lyons	Mary	California Maritime Academy	
	Crit	Karen	California Research Bureau	
Ms.	Hart	Evelyn	Carquinez Highlands	
Mr.	Bolds-King	Leon	Carriage Oaks Homeowners Association	
			Center for Economic Conversion	
			Center for Marine Conservation	
			Central Labor Council of Napa & Solano Co.	
Mr.	Campbell	Richard	Citizens for a Natural Waterfront	
President			Citizens for Responsible Growth	
Chairperson	Norton	Mary	Cortina Indian Rancheria of Wintun Indians	
			Downtown Association	
Ms.	Matsuoka	Martha	Earth Island Institute	Urban Habitat Program
Mr.	Egidio	Tom	Egidio Realty	
Mr.	Elliott	Bill	Elliott Real Estate	
Ms.	Gallagher	MaryJane	Environmental Defense Fund	
Mr.	Lavezzo	Albert	Favaro, Lavezzo, et al.	
Mr.	Marinez	Tranquilino	Felad Image De Vallejo	
Mr.	Berenguer	Carlos	Filipino Community of Solano County	
Ms.	McClelland	Patricia	General Mills, Inc.	Sperry Division
Mr.	Walker	Ben	Greenpeace	
	Directors	Board of	Hillcrest Park Homeowners Association	
Mr.	Webb	Carl	IFPTE Local 11	Local 11
Mr.	Hutchings	Mark	International Association of Firefighters	Local F-48
			League for Coastal Protection	
Mr.	Remick	Tom	Metal Trades Council	
			Military Toxics Project	

Title	Last	First	Organization	Branch
Ms.	Taylor	Annette	NAACP	
Mr.	Boyer	Ronald	Napa Private Industry Council	
Mr.	Leong	Robin	Napa Solano Audubon Society	
Mr.	Franchimon	Louis	Napa Solano Building Trades	
Mr.	Meng	Charles	Napa Valley College Board	
			National Rifle Association	
Mr.	Candee	Hal	Natural Resources Defense Council	
			Nature Conservancy	
Mr.	Christenswn	Bruce	Navy Yard Association	
Mr.	Quintos	Glen	NRS Quinto Realty	
	Schonherr	Michael	Pacific Gas & Electric	
			Peace Studies Center	
	Byrd	Owen	People for Open Space-Greenbelt Alliance	
			Private Industry Council of Solano County	
Ms.	Azevedo	Cathy	Prudential Securities	
Mr.	Gohre	Kirk	Restoration Advisory Board	Community member, Vallejo
Ms.	Tygielski	Paula	Restoration Advisory Board	Community member, Benicia
Ms.	Tiburcio	Delores	Restoration Advisory Board	Federally Employed Women
Mr.	Bradley	Percy	Restoration Advisory Board	Community member, Fairfield
Ms.	Quigley	Sharon	Restoration Advisory Board	Community member, Vallejo
Mr.	Southerd	Burle	Restoration Advisory Board	Homeacres Neighborhood Council
Mr.	Johnson	William	Restoration Advisory Board	Citizens for Responsible Growth
Ms.	Schady	Sandra	Restoration Advisory Board	St. Vincents Hill Neighborhood Association
Director	Gravanis	Ruth	Restoring the Bay Campaign	
Mr.	Glaze	Dan	Sandy Beach Association	
Ms.	Hayes	Myrna	Save San Pablo Baylands	PO Box 7665
Ms.	Hansen	Robin	SE Vallejo Neighbors for Action	
Mr.	Dowswell	Dave	Seaview Homeowners Association	
Mr.	Browne	Ken	Sierra Club	Solano Group
			Social Economic Environmental Justice Advocates	
Mr.	Havlick	Neil	Farmlands & Open Space Foundation of Solano County	
	Jamison	Tolisa	South Vallejo Neighborhood Association	
Mr.	Edison	Tom	St. Vincents Hill Neighborhood Association	
President	Quinn	Harlan	Vallejo Heights Neighborhood Association	
			Vallejo Naval and Historical Museum	
Mr.	Middleton	Richard	Vallejo NAACP	
Ms.	Corliss	Julia	Vallejo Senior Citizens' Council	
			Vallejo Yacht Club	
Mr.	Blackfox II	Walter S.	Windwalker Corporation	
Mr.	Cornelius	Glen	Wilson Cornelius Ford	
			Individuals	
Mr.	Anderson	Randy		
Mr.	Bayles	Phil		
Ms.	Bethel	Veronica		
Mr.	Brians	Richard		
Mr.	Boyer	Ron		
Mr.	Bothell	Rex		
Mr.	Brekke	Robert		
Mr.	Burgelin	Lou		

Title	Last	First	Organization	Branch
Mr.	Casper	Kenneth		
Mr.	Christian	Diji		
Mr.	Davis	Terry		
Mr.	Dopkins	D.		
Mr.	Hassel	Dick		
Ms.	Hewitt	Cathy Ann		
Mr.	Jackson	Frank		
Ms.	Krevsky	Diana		
Mr.	Lamorce	Dave		
Mr.	Mahaffey	Craig		
Mr.	Maxey	Don		
Ms.	Monson	Arlee		
Mr.	Morrison	Bill		
Mr.	Nystrom	William		
Mr.	O'Brien	Bob		
Mr.	Osborne	John		
Ms.	Patrick	Patricia		
Ms.	Shukla	Deb		
Ms.	Welch	Thelma		
Ms.	Wardlaw	Helene		
			Libraries	
	Schmidt	Fred	Calistoga Library Colorado State University John F. Kennedy Library Napa Library Springstowne Library St. Helena Library Yountville Library	
			Newspapers	
	Room	News	Contra Costa Times Daily Republic Vallejo Times Herald	

6.5 FINAL EIS/EIR DISTRIBUTION LIST

Title	Last	First	Organization	Branch	City	State
			Elected Officials			
Assemblywoman	Thomson	Helen			Fairfield	CA
Mr.	Berenguer	Ike	Assemblywoman Brown's Office		Vallejo	CA
Mayor	Anderson	Ben	City of American Canyon		American Canyon	CA
Mayor	Hayes	Jerry	City of Benecia		Benecia	CA
Mayor	Erickson	Don	City of Dixon		Dixon	CA
Mayor	Hammond	Chuck	City of Fairfield		Fairfield	CA
Mayor	Harris	Fred	City of Rio Vista		Rio Vista	CA
Mayor	Spering	Jim	City of Suisun City		Suisun City	CA
Mayor	Fleming	David	City of Vacaville		Vacaville	CA
Mayor	Exline	Gloria	City of Vallejo		Vallejo	CA
Vice Mayor	Martin	Ray	City of Vallejo		Vallejo	CA
Councilmember	Hicks	Foster	City of Vallejo		Vallejo	CA
Councilmember	Donahue	Dan	City of Vallejo		Vallejo	CA
Councilmember	Rey	Pete	City of Vallejo		Vallejo	CA
Councilmember	Schively	Joanne	City of Vallejo		Vallejo	CA
Councilmember	Pitts	Pamela	City of Vallejo		Vallejo	CA
			Congressman Rigg's Office		Napa	CA
Mr.	Morley	Kevin	Congressman Fazio's Office		Woodland	CA
Ms.	Hoffman	Kathy	Congressman Miller's Office		Vallejo	CA
Supervisor	Ferriole	Vince	Napa County		Napa	CA
Supervisor	Rippey	Mike	Napa County		Napa	CA
Supervisor	Kondylis	Barbera	Solano County District 1		Vallejo	CA
Supervisor	Silva	John	Solano County District 2		Vallejo	CA
Supervisor	Gojkovich	Gordon	Solano County District 3		Fairfield	CA
Supervisor	Carroll	Bill	Solano County District 4		Fairfield	CA
Supervisor	Thomson	Skip	Solano County District 5		Fairfield	CA
Mr.	Hass	John	Senator Boxer's Office		San Francisco	CA
Mr.	Lowe	Russell	Senator Feinstein's Office		San Francisco	CA
Mr.	La Faille	Tom	Senator Thompson's Office		Sacramento	CA
			Federal Agencies			
	Director	Regional	Federal Emergency Management Agency	Region IX	San Francisco	CA
Mr.	Prater	Jimmy	Dept. of Housing and Urban Development		San Francisco	CA
Ms.	Keetinge	Lee	Advisory Council on Historic Preservation	Western Office of Planning and Review	Lakewood	CO
Executive Director			Advisory Council on Historic Preservation		Washington	DC
			General Services Administration	Office of Public Bldgs & Real Property	Sacramento	CA
Chief, Northern Branch	Cah	Dianne	General Services Administration	Office of Real Estate Sales (90R)	San Francisco	CA
Regional Director	Diaz Soltero	Hilda	National Marine Fisheries Service	SW Region	Long Beach	CA
Chief, Regulatory Branch	Feng	Calvin	US Army Corps of Engineers	(CESPN-CO-R)	San Francisco	CA
Commander		(CESPN-CO)	US Army Corps of Engineers	ATTN: Jane Hicks	San Francisco	CA
	Engineer	District	US Army Corps of Engineers	Attn: CESPK-PM-M	Sacramento	CA
Dr.	Lerner	Richard	US Army Corps of Engineers, SF Branch	Environmental Branch, (CESP-CF-R)	San Francisco	CA
	Lozano	Leo	US Coast Guard	NLCP(SP)	Alameda	CA

Title	Last	First	Organization	Branch	City	State
Mr.	Rivero	Louis	US Coast Guard	Civil Engineering Unit, Oakland	Oakland	CA
Mr.	Till	W.R.	US Coast Guard	11th Coast Guard District	Alameda	CA
Ms.	Boyle	Sue	US Coast Guard	Pacific Area	Alameda	CA
	Sullivan	Denise	US Dept of Commerce	NOAA	San Francisco	CA
	Dempsey	Paul	US Dept of Defense	Office of Economic Adjustment	Washington	DC
	Ryeff	Paul	US Dept of Defense	Office of Economic Adjustment	Sacramento	CA
	Hoops	George	US Dept of Education	Federal Real Property Assistance Program	Seattle	WA
Mr.	Hakola	David	US Dept of Education		Washington	DC
Director			US Dept of the Interior	Office of Environmental Affairs	Washington	DC
	Env. Section	Chief,	US Dept of the Interior	Bureau of Indian Affairs	Sacramento	CA
	Hestey	Ed	US Dept of the Interior	Bureau of Land Management	Sacramento	CA
Regional Environmental Officer	Port	Pat	US Dept of the Interior	Office of Environmental Policy and Compliance	San Francisco	CA
Chief of Planning, Grants, & Env. Qual.	Murray	Ray	US Dept of the Interior	National Park Service	San Francisco	CA
Field Director, Pacific West Area	Albright	Stanley	US Dept of the Interior	National Park Service	San Francisco	CA
	Representative	Director's	US Dept of the Interior, USGS		Menlo Park	CA
	Hydrologist	Regional	US Dept of the Interior, USGS	Water Resources Division	Menlo Park	CA
Region IX Secretary	Patak	Thomas	US Dept of Transportation		San Francisco	CA
	Mittlehotz	Ken	US Environmental Protection Agency	Office of Federal Activities	Washington	DC
	Arthur	Bonnie	US Environmental Protection Agency, Region IX Restoration Advisory Board		San Francisco	CA
	Farrel	David	US Environmental Protection Agency, Region IX	Environmental Review Section (E-3-1)	San Francisco	CA
	Tomsovic	David	US Environmental Protection Agency, Region IX	Office of External Affairs	San Francisco	CA
Ms.	Hill	Esther	US Environmental Protection Agency, Region IX	Code H-9-2	San Francisco	CA
	Huetteman	Tom	US Environmental Protection Agency, Region IX		San Francisco	CA
Assistant Refuge Manager	Radtke	Betsy	US Fish & Wildlife Service	San Francisco Bay National Wildlife Refuge	Vallejo	CA
	Osugi	Cathy	US Fish & Wildlife Service	Realty Division (ARW-RE)	Portland	OR
	Haas	James	US Fish & Wildlife Service Restoration Advisory Board	Ecological Services	Sacramento	CA
	Medlin	Joel	US Fish & Wildlife Service	Ecological Services	Sacramento	CA
	Esparantz	John	US Fish & Wildlife Service	Refuge Division - Third Floor	Portland	OR
	Aceituno	Mike	US Fish & Wildlife Service	Ecological Services	Sacramento	CA
	Exter	Liz	US Forest Service	Pleasant Hill Engineering Center	Pleasant Hill	CA
District Director	Ilchert	David	US Immigration and Naturalization Service	Appraisers Building	San Francisco	CA
Mr.	Stuart	Subke	US Immigration and Naturalization Service		Washington	DC
Director			US State Department	Office of Environmental Affairs	Washington	DC
			Navy			
Commander			US Navy	Naval Base San Diego, ATTN: J. Ruzicska	San Diego	CA
Mr.	Pearson	Charles	US Navy	Naval Sea Systems Command (O8R)	Arlington	VA

Title	Last	First	Organization	Branch	City	State
			State Agencies			
Executive Director	Travis	William	SF Bay Conservation & Dev Commission		San Francisco	CA
Director	Tollstrup	Mike	CA Air Resources Board	Stationary Sources	Sacramento	CA
			CA Archaeological Inventory	Sonoma State University, Foundation Center	Rohnert Park	CA
			CA Dept of Boating & Waterways		Sacramento	CA
			CA Dept of Conservation	Div of Mines & Geology	San Francisco	CA
	Trott	Ken	CA Dept of Conservation	Office of Land Conservation	Sacramento	CA
	Hunter	Brian	CA Dept of Fish & Game	NW Region 3	Yountville	CA
	Phillips	Pete	CA Dept of Fish & Game	Environmental Services Div.	Sacramento	CA
	Wickizer	Douglas	CA Dept of Forestry		Sacramento	CA
	Hsu	Steve	CA Dept of Health Services	Radiological Health Dept	Sacramento	CA
	Pierce	Ken	CA Dept of Parks & Recreation	Resource Management Division	Sacramento	CA
Mr.	Badal	Phillip	CA Dept of Transportation		Oakland	CA
	Berthelsen	Gene	CA Dept of Transportation	District 10	Stockton	CA
Chief	Erwin	Edwin	CA Dept of Transportation	Transportation Planning, Branch A	Stockton	CA
	Barrie	Terry	CA Dept of Transportation	Transportation Planning	Oakland	CA
Branch Chief	Forsen	Ace	CA Dept of Transportation, District 4	Transportation Planning Branch, 14th Floor	Oakland	CA
	Pettit	Walt	CA Dept of Water Resources		Sacramento	CA
Ms.	Peebles	Diana	CA Environmental Protection Agency	Dept of Toxic Substance Cntl, Office of Military Facilities	Sacramento	CA
			CA Environmental Protection Agency	Dept. of Toxic Substance Control	Sacramento	CA
Mr.	Gribble	Chip	CA Environmental Protection Agency	Dept of Toxic Substance Cntl	Berkeley	CA
			CA Office of Emergency Services Restoration Advisory Board		Oakland	CA
	Chiaritti	Mike	CA Office of Planning & Research		Sacramento	CA
	von Ibsch	Ernie	CA Public Utilities Commission	Safety and Enforcement Division	San Francisco	CA
	Adams	John	CA Regional Water Quality Cntl Brd	Land Disposal Section	Sacramento	CA
	Gansbury	Tom	CA Regional Water Quality Cntl Brd	Basic Planning Unit	Oakland	CA
	Kathuria	Gina	CA Regional Water Quality Cntl Brd		Oakland	CA
			CA State Clearing House		Sacramento	CA
	Rochelle	Michael	Regional Water Quality Control Board Restoration Advisory Board		Oakland	CA
Project Manager	Nevins	Terri	CA State Coastal Conservancy		Oakland	CA
CA State Historic Preservation Officer	Widell	Cherilyn	CA State Historic Preservation Office		Sacramento	CA
	Plummer	Dave	CA State Lands Commission	Div of Research & Planning	Sacramento	CA
Executive Director	Hight	Robert	CA State Lands Commission	Div of Land Management	Sacramento	CA
Ms.	Severins	Laurin	CA Trade and Commerce		Sacramento	CA
	Nagle	Thomas	Coastal Area Information Group	Employment Development Dept	San Francisco	CA
	Brittle	Chris	Metropolitan Transportation Commission		Oakland	CA
	Roddin	Marc F.	Metropolitan Transportation Commission		Oakland	CA
	Johnson	Bill	Native American Heritage Commission		Sacramento	CA
	Langenthal	Josh	SF Bay Regional Water Quality Cntl Board		Oakland	CA
	Wheeler	Douglas	The Resources Agency		Sacramento	CA

Title	Last	First	Organization	Branch	City	State
			Local Agencies			
Ms.	Johnson	Elizabeth	Alameda Reuse and Redevelopment Authority	950 Mall Square	Alameda	CA
Ms.	Pigeon-Ontis	Elizabeth	Architectural Heritage and Landmarks Commission	1129 Sutter Street	Vallejo	CA
	Perry	Patricia	Assoc of Bay Area Governments		Oakland	CA
Supervising Environmental Planner	Mussen	Irwin	Bay Area Air Quality Management District		San Francisco	CA
Planning Director			City of American Canyon		American Canyon	CA
Planning Director	Bunch	John	City of Benicia	Planning Dept	Benicia	CA
Director	Louie	James	City of Dixon	Community Development Dept.	Dixon	CA
Planning Commissioner	Evans	Richard	City of Vallejo		Vallejo	CA
Planning Commissioner	Sultan	Mohsen	City of Vallejo		Vallejo	CA
Planning Commissioner	Jackson	Jimmie	City of Vallejo		Vallejo	CA
Planning Commissioner	Walker	Betty	City of Vallejo		Vallejo	CA
Planning Commissioner	Beeman	Paul	City of Vallejo		Vallejo	CA
Planning Commissioner	Heckman	Kurt	City of Vallejo		Vallejo	CA
Planning Commissioner	Fraser	Mary	City of Vallejo		Vallejo	CA
Community Development Director	de Silva	Alvaro	City of Vallejo		Vallejo	CA
Water Superintendent	Gandling	Ex	City of Vallejo		Vallejo	CA
Police Chief	Nichelini	Robert	City of Vallejo	Police Dept	Vallejo	CA
Program Manager	Hollingsworth	Gil	City of Vallejo	Mare Island Conversion Division	Vallejo	CA
City Engineer	Leach	Gary	City of Vallejo	Public Works Dept	Vallejo	CA
			Restoration Advisory Board		Vallejo	CA
Fire Chief			City of Vallejo	Fire Dept	Vallejo	CA
City Manager	Barclay	Penny	City of Vallejo		Vallejo	CA
Assistance City Manager	Hill	Mary	City of Vallejo		Vallejo	CA
City Attorney	Powers	John	City of Vallejo		Vallejo	CA
Assistant City Attorney	Goodmiller	Bruce	City of Vallejo		Vallejo	CA
Director	Merideth	Ann	City of Vallejo	Development Services Department	Vallejo	CA
Executive V.P.	Egidio	Tom	City of Vallejo	Chamber of Commerce	Vallejo	CA
G.M.	Gloyd	Patricia	Greater Vallejo Recreation District		Vallejo	CA
	Deweerd	Donna	Napa County	Employment Training Office	Napa	CA
Executive Director	Pieper	Angie	Napa Valley Economic Development Corp.		Napa	CA
Manager	McGrath	Jim	Port of Oakland	Environmental Department	Oakland	CA
President	McKnight	Willie	Solano Community College Board		Vallejo	CA
President	Dawson	Matthew	Solano County Black Chamber of Commerce		Vallejo	CA
	Beebe	Dennis	Solano County	Mosquito Abatement District	Suisan	CA

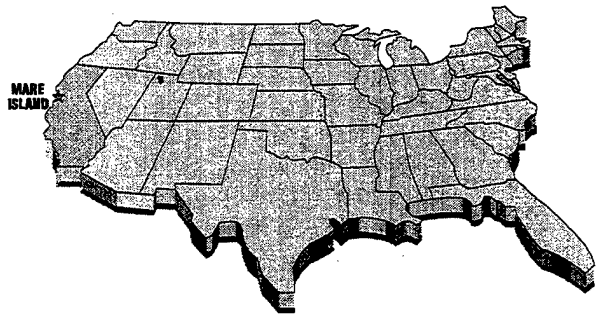
Title	Last	First	Organization	Branch	City	State
Resource Dev. Director	McWood	Peggy	Solano County	Economic Opportunity Comm	Suisun	CA
President	Sunga	Hermie	Filipino American Chamber of Commerce of Solano County		Benicia	CA
President	Kim	William	Solano County Korean Chamber of Commerce		Vallejo	CA
President	Cosme	Manuel	Solano/Napa Hispanic Chamber of Commerce		Vacaville	CA
	Rowe	Donald	Solano County	Health & Social Services	Fairfield	CA
Director	Corsello	Birgetta	Solano County	Dept of Env. Management	Fairfield	CA
	Perez	Miles J.	Solano County Dept of Environmental Management	Environmental Health Division	Fairfield	CA
	McCarthy	Mary	Solano Economic Development Corp.		Fairfield	CA
Facilities Director	Browning	Ethan	Vallejo City Unified School District		Vallejo	CA
Engineer/Manager	Hoehn	Michael	Vallejo Sanitation & Flood Control District		Vallejo	CA
			Organizations			
Mr.	Pielmeier	Paul	ADI Technology Corporation		Arlington	VA
	Miller	J. T.	AFL-CIO Central Labor Council		American Canyon	CA
			Aquatic Habitat Institute		Richmond	CA
	Bloom	Saul	Arms Control Research Center		San Francisco	CA
			Asian Immigrant Workers Advocates		Oakland	CA
			Asian Pacific Environmental Network		Oakland	CA
			Restoration Advisory Board			
Ms.	Johnck	Ellen	Bay Planning Coalition		San Francisco	CA
Ms.	Pangborn	Brenda	Bridgeport Property Owners Association		Vallejo	CA
			California Council for Env. and Econ. Balance		San Francisco	CA
			California Environmental Trust		San Francisco	CA
			California Native Grass Association		Dixon	CA
			California Network for a New Economy		San Francisco	CA
Ms.	Thrash	Carmen	CH2Mhill		Reston	VA
President	Aspland	Jerry	California Maritime Academy		Vallejo	CA
	Crit	Karen	California Research Bureau		Sacramento	CA
Mr.	Bryon	Harry A.	Camber Corporation		Knoxville	TN
Ms.	Hart	Evelyn	Carquinez Highlands		Vallejo	CA
Mr.	Bolds-King	Leon	Carriage Oaks Homeowners Association		Vallejo	CA
			Center for Economic Conversion		Mountain View	CA
			Center for Marine Conservation		San Francisco	CA
			Central Labor Council of Napa & Solano Co.		Vallejo	CA
Mr.	Campbell	Richard	Citizens for a Natural Waterfront		Vallejo	CA
President			Citizens for Responsible Growth		Vallejo	CA
	Johnson	William	Citizens for Responsible Growth		Vallejo	CA
Chairperson	Norton	Mary	Cortina Indian Rancheria of Wintun Indians		Citrus Heights	CA
	Dickson	Clinton	Central Core Restoration Corp.		Vallejo	CA
Ms.	Henrickson	Lucinda	Cutler Stanfield		Washington	DC
Mr.	Silva	Bob	DeSilva/Gates			
Ms.	Matsuoka	Martha	Earth Island Institute	Urban Habitat Program	San Francisco	CA
Mr.	Elliott	Bill	Elliott Real Estate		Vallejo	CA
Ms.	Graff	Tom	Environmental Defense Fund		Oakland	CA

Title	Last	First	Organization	Branch	City	State
Mr.	Bascom	Duke	E&YKL			
Mr.	Lavezzo	Albert	Favaro, Lavezzo, et al.		Vallejo	CA
Mr.	Marinez	Tranquilino	Felad Image De Vallejo		Vallejo	CA
Mr.	Berenguer	Carlos	Filipino Community of Solano County		Vallejo	CA
Ms.	Thornhill	Barbara	Folger, Levin, and Kahn		San Francisco	CA
Mr.	Beasley	Gary	G.R. Krause, Inc.		Suisun City	CA
Ms.	McClelland	Patricia	General Mills, Inc.	Sperry Division	Vallejo	CA
Mr.	Walker	Ben	Greenpeace		San Francisco	CA
	Directors	Board of	Hillcrest Park Homeowners Association		Walnut Creek	CA
Mr.	Webb	Carl	IFPTE Local 11	Local 11	Vallejo	CA
Mr.	Hutchings	Mark	International Association of Firefighters	Local F-48	Vallejo	CA
			League for Coastal Protection		San Francisco	CA
Mr.	Santos	Bob	Lennar Mare Island		Vallejo	CA
Mr.	O'Neill	Mike	Lincoln Properties			
Mr.	Zadwick	Kenneth	MI Historic Park Foundation	328 Seawind	Vallejo	CA
Mr.	Remick	Tom	Metal Trades Council		Vallejo	CA
			Military Toxics Project		San Francisco	CA
Ms.	Taylor	Annette	NAACP		Vallejo	CA
Mr.	Della Valle	Richard	Napa Valley College	Department of Earth and Environmental Sciences	Napa	CA
Mr.	Leong	Robin	Napa Solano Audubon Society		Vallejo	CA
Mr.	Franchimon	Louis	Napa Solano Building Trades		Vallejo	CA
Mr.	Meng	Charles	Napa Valley College Board		Napa	CA
			National Rifle Association		Sacramento	CA
Director	Goldstein	Elizabeth	National Trust for Historic Preservation	Western Regional Office	Washington	DC
Ms.	Damkroger	Courtney	National Trust for Historic Preservation		San Francisco	CA
Mr.	Candee	Hal	Natural Resources Defense Council		San Francisco	CA
Attn:	Colleen		Nature Conservancy		San Francisco	CA
Mr.	Christensen	Bruce	Navy Yard Association		Vallejo	CA
Mr.	Quintos	Glen	NRS Quinto Realty		Vallejo	CA
Mr.	Schonherr	Michael	Pacific Gas & Electric		San Francisco	CA
			Peace Studies Center		Mountain View	CA
Mr.	Byrd	Owen	People for Open Space-Greenbelt Alliance		San Francisco	CA
			Private Industry Council of Solano County		Vallejo	CA
Ms.	Hack	Karen	Arms Control Research Center		San Francisco	CA
Mr.	Christian	Vincent	RWQCB		Oakland	CA
Ms.	Hillman	Helen	NOAA		San Francisco	CA
			Restoration Advisory Board			
Mr.	Karr	Gerald	Restoration Advisory Board		Vallejo	CA
Mr.	Lee	Ralph	Restoration Advisory Board		Benicia	CA
Mr.	Johnson	Kirk	Restoration Advisory Board		Vallejo	CA
Mr.	LeMaster	David	Restoration Advisory Board		Napa	CA
Ms.	Mouton-Jefferson	Mata	Restoration Advisory Board		Vallejo	CA
Ms.	Tygielski	Paula	Restoration Advisory Board		Benecia	CA
Ms.	Krevsky	Diana	Restoration Advisory Board		Vallejo	CA
Mr.	O'Loughlin	James	Restoration Advisory Board		Napa	CA
Mr.	Schonholtz	Rob	Restoration Advisory Board		Vallejo	CA
Ms.	Stepps	Charles	Restoration Advisory Board		Vallejo	CA

Title	Last	First	Organization	Branch	City	State
Mr.	Southerd	Burke	Restoration Advisory Board		Vallejo	CA
			Homeacres Neighborhood Council			
Mr.	White	John	Restoration Advisory Board		Vacaville	CA
Ms.	Vogel-Beattie	Naomi	Restoration Advisory Board		Napa	CA
Ms.	Schady	Sandra	Restoration Advisory Board		Vallejo	CA
			St. Vincents Hill Neighborhood Association			
Director	Gravanis	Ruth	Restoring the Bay Campaign		Oakland	CA
Ms.	Toomes	Charlene	STRA, Inc.		Arlington	VA
Mr.	Glaze	Dan	Sandy Beach Association		Vallejo	CA
Ms.	Hayes	Myrna	Save San Pablo Baylands		Vallejo	CA
			Restoration Advisory Board			
Ms.	Hansen	Robin	SE Vallejo Neighbors for Action		Vallejo	CA
Mr.	Dowswell	Dave	Seaview Homeowners Association		Vallejo	CA
Mr.	Browne	Ken	Sierra Club	Solano Group	Vallejo	CA
			Social Economic Environmental Justice Advocates		San Francisco	CA
			Restoration Advisory Board		Vallejo	CA
Mr.	Havlik	Neil	Farmlands & Open Space Foundation of Solano County		Fairfield	CA
	Jamison	Tolisa	South Vallejo Neighborhood Association		Vallejo	CA
Ms.	Herron	Sandra	St. Vincents Hill Neighborhood Association		Vallejo	CA
Ms.	Mullahey	Ramona	Urban Land Institute		Honolulu	HI
President			Vallejo Heights Neighborhood Association		Vallejo	CA
			Vallejo Naval and Historical Museum		Vallejo	CA
Mr.	Middleton	Richard	Vallejo NAACP		Vallejo	CA
Ms.	Corliss	Julia	Vallejo Senior Citizens' Council		Vallejo	CA
			Vallejo Yacht Club		Vallejo	CA
Mr.	Blackfox II	Walter S.	Windwalker Corporation		Washington	DC
Mr.	Cornelius	Glen	Wilson Cornelius Ford		Vallejo	CA
			Individuals			
Mr.	Anderson	Randy			Napa	CA
Mr.	Bayles	Phil			Concord	CA
Ms.	Bethel	Veronica			Vallejo	CA
Mr.	Brians	Richard			Dixon	CA
Mr.	Boyer	Ron			Vallejo	CA
Mr.	Bothell	Rex			Concord	CA
Mr.	Brekke	Robert			Vallejo	CA
Mr.	Burgelin	Lou			Vallejo	CA
Mr.	Casper	Kenneth			Vallejo	CA
Mr.	Christian	Diji			Vallejo	CA
Mr.	Davis	Terry			Vallejo	CA
Mr.	Dopkins	D.			Vallejo	CA
Mr.	Hassel	Dick			Vallejo	CA
Mr.	Jackson	Frank			Vallejo	CA
Mr.	Lamorce	Dave			Vallejo	CA
Mr.	Mahaffey	Craig			San Francisco	CA
Mr.	Maxey	Don			Vallejo	CA
Ms.	Monson	Arlee			San Francisco	CA
Mr.	Morrison	Bill			San Francisco	CA
Mr.	Nystrom	William			Calistoga	CA

Title	Last	First	Organization	Branch	City	State
Mr.	O'Brien	Bob			Napa	CA
Mr.	Osborne	John			Vallejo	CA
Ms.	Patrick	Patricia			Vallejo	CA
Ms.	Shukla	Deb			Oakland	CA
Ms.	Welch	Thelma			Vallejo	CA
Ms.	Wardlaw	Helene			Vallejo	CA
			Libraries			
			Calistoga Library		Calistoga	CA
	Schmidt	Fred	Colorado State University	The Libraries	Fort Collins	CO
			Defense Technical Information Center (DTIC)	DTIC Customer Service Help Desk (DTIC-BLS)	Fort Belvoir	VA
			John F. Kennedy Library		Vallejo	CA
			Napa Library		Napa	CA
			Springstowne Library		Vallejo	CA
			St. Helena Library		St. Helena	CA
			Yountville Library		Yountville	CA
			Newspapers			
	Room	News	Contra Costa Times		Walnut Creek	CA
			Daily Republic		Fairfield	CA
			Vallejo Times Herald		Vallejo	CA

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7.0 REFERENCES

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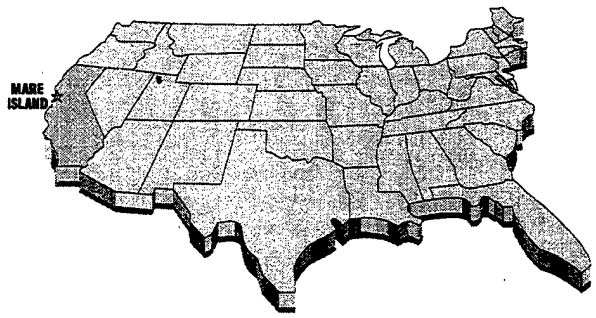
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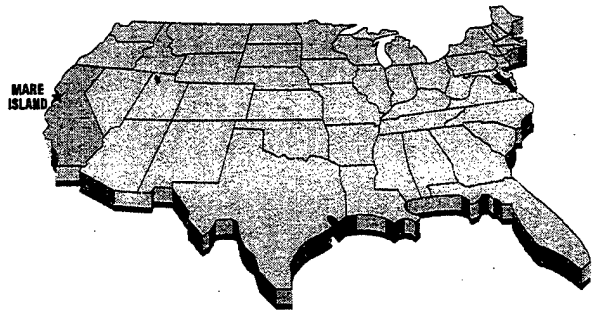
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GLOSSARY OF TERMS

100-Year Flood Zone	Land area having a 1 percent chance of being flooded during a given year.
A-Weighted Decibel (dBA)	A number representing the sound level which is frequency weighted according to a prescribed frequency response established by the American National Standards Institute (ANSI-S1.4-1971) and accounts for the response of the human ear.
Aesthetics	Referring to the perception of beauty.
Ambient Air Quality Standards	Standards established on a state or Federal level that define the limits for airborne concentrations of designated criteria pollutants (nitrogen dioxide, sulfur dioxide, carbon monoxide, ozone, lead), to protect public health with an adequate margin of safety (primary standards) and public welfare, including plant and animal life, visibility, and materials (secondary standards).
Artifact	Any product or human cultural activity; more specifically, any tools, weapons, artworks, etc., found in archeological contexts.
Asbestos	A carcinogenic substance formerly used widely as an insulation material by the construction industry; often found in older buildings.
Assemblage	The complete inventory of artifacts from a single, defined archaeological unit (such as a stratum or component).
Attainment Area	An area which meets the National Ambient Air Quality Standards for a criteria pollutant under the Clean Air Act or meets state air quality standards.
Burial	Human remains disposed of by interment. Burials may be *simple* (containing the remains of 1 person) or *complex* (containing the remains of 2 or more individuals), *primary* (including the remains as originally interred), or *secondary* (where a reinterment follows a temporary disposal elsewhere).
California Environmental Quality Act (CEQA), Cal. Pub. Res. Code §21000 *et seq.*	CEQA is the CA state equivalent to NEPA. It requires an environmental review of projects deemed to have significant environmental impacts and which require state or local government approval or are publicly funded.
Capacity (Transportation)	The maximum rate of flow at which vehicles can be reasonably expected to traverse a point or uniform segment of a lane or roadway during a specified time period under prevailing roadway, traffic, and control conditions.
Capacity (Utilities)	The maximum load a system is capable of carrying under existing service conditions.
Cardwell Survey	An architectural and historical analysis conducted by Kenneth H. Cardwell in 1986 that resulted in a revised National Register Nomination Form, identification of additional historic buildings and structures, and a refinement of the boundaries of the 5 historic districts that form the Mare Island Naval Shipyard Historic District National Historic Landmark.

Clean Air Act (CAA), 42 U.S.C. §7401 *et seq.*	The CAA legislates that air quality standards set by Federal, state, and county regulatory agencies establish maximum allowable emission rates and pollutant concentrations for sources of air pollution on Federal and private property. Also regulated under this law is proper removal and safe disposal of asbestos from buildings other than schools.
Clean Water Act (CWA), 33 U.S.C. §1251 *et seq.*	The CWA is the major Federal legislation concerning improvement of the nations water resources. It provides for development of municipal and industrial wastewater treatment standards and a permitting system to control wastewater discharges to surface waters. The act contains specific provisions for regulation of ships' wastewater and disposal of dredge spoils within navigable waters. Section 404 of the act regulates disposal into waters of the United States, including wetlands.
Climate	The prevalent or characteristic meteorological conditions (and their extremes) of any given location or region.
Community Noise Equivalent Level	Noise Compatibility level established by California Administrative Code, Title 21, Section 5000. The 24-hour average A-weighted sound level with a 5 dB weighting added to levels occurring between 10:00 p.m. and 7:00 a.m.
Community Environmental Response Facilitation Act (CERFA), 42 U.S.C. §9601 note (West 1995)	A 1992 amendment to CERCLA, CERFA expedites the identification of uncontaminated real property within closing facilities which offer the greatest opportunity for reuse and redevelopment.
Comprehensive Environmental Response, Compensation, And Liability Act (CERCLA), 42 U.S.C. §9610 *et seq.*	CERCLA, also known as Superfund, was enacted in 1980 to ensure that a source of funds is available to clean up abandoned hazardous waste dumps, compensate victims, address releases of hazardous materials, and establish liability standards for responsible parties. The act also requires creation of a National Priorities List which sets forth the sites considered to have the highest priority for cleanup under Superfund.
Council On Environmental Quality (CEQ)	Established by NEPA, the CEQ consists of 3 members appointed by the President. CEQ regulations, 40 C.F.R. §1500-1508, as of July 1, 1986 describe the process for implementing NEPA, including preparation of environmental assessments and environmental impact statements, and timing and extent of public participation.
Cultural	(1) The nonbiological and socially transmitted system of concepts, institutions, behavior, and materials by which a society adapts to its effective natural and human environment. (2) Similar or related assemblages of approximately the same age from a single locality or district, thought to represent the activities of 1 social group.
Cultural History	The archeological sequence of cultural activity through time, within a defined geographic space or relating to a particular group.
Cultural Resource	Prehistoric or historic districts, sites, buildings, objects, or any other physical evidence of human activity considered important to a culture, subculture, or community for scientific, traditional, religious, or any other reason.

Cumulative Impacts	The combined impacts resulting from all programs occurring concurrently at a given location.
Day-Night Average Sound Level (Ldn)	The 24-hour average-energy sound level expressed in decibels, with a 10 decibel penalty added to sound levels between 10:00 p.m. and 7:00 a.m. to account for increased annoyance due to noise during the night.
Decibel (dB)	A unit of measurement on a logarithmic scale which describes the magnitude of a particular quantity of sound pressure or power with respect to a standard reference value.
Defense Environmental Restoration Program (DERP)	DERP is the Department of Defense hazardous materials cleanup program. It is separate from CERCLA but follows the same basic procedures, including the same regulatory oversight. The goals of the program are the identification, investigation, remediation, and cleanup of contamination from hazardous substances, pollutants, and contaminants. The funding for DERP is independent of Superfund.
Developed	Said of land, a lot, a parcel, or an area that has been built upon, or where public services have been installed prior to residential or commercial construction.
Dialect	The variety of a language spoken by all members of a speech community; languages may include many, mutually intelligible dialects.
Disposal	Legal transfer of Navy property to other ownership.
Dredging	Removal of mud from the bottom of water bodies using a scooping machine.
Effluent	Waste material discharged into the environment.
Endangered Species	A species that is threatened with extinction throughout all or a significant portion of its range.
Endangered Species Act (ESA), 16 U.S.C. §1531 *et seq.*	The ESA requires Federal agencies to determine the effects of their actions on endangered species and their critical habitats.
Environmental Impact Statement (EIS)	A document required of Federal agencies by NEPA for major projects or legislative proposals significantly affecting the environment. A tool for decision making, the EIS describes the positive and negative effects of the undertaking and lists alternative actions.
Equivalent Noise Levels (Leq)	Equivalent noise levels are used to develop single-value descriptions of average noise exposure over various periods of time.
Ethnography	The direct anthropological study of living human groups or the study of recent, historically documented groups.
Fault	Fracture in earth's crust accompanied by a displacement of 1 side of the fracture with respect to the other and in a direction parallel to the fracture.

Feasibility Study (FS)	The feasibility study identifies and evaluates all applicable site cleanup alternatives. For most sites, a long list of alternatives are possible. A risk assessment is performed as part of the study to quantify the level of risk to the public and environment posed by the site. Often, the risk assessment determines which alternative is selected for final remediation. Each alternative is evaluated for effectiveness in protecting human health and the environment, ease of implementation, and overall cost. Typically, the RI and FS are performed concurrently.
Feature	A large, complex artifact or part of a site such as a hearth, cairn, housepit, rock alignment, or activity area.
Flora	Plants; organisms of the plant kingdom taken collectively.
Ground Water	Water within the earth that supplies wells and springs.
Hazard Ranking System (HRS)	This system provides a uniform method of scoring or ranking of the potential risk of a facility site where a hazardous substance has been present. The EPA developed the HR. to prioritize their cleanup efforts. The EPA evaluates the draft HRS packages and proposes any facilities scoring over 28.5 or higher for inclusion on the National Priorities List (NPL). Facilities which are listed on the NPL receive the highest priority.
Hazardous Material	A substance or mixture of substances that poses a substantial present or potential risk to human health or the environment. Any substance designated by the EPA to be reported if a designated quantity of the substance is spilled in the waters of the United States or if it is otherwise released into the environment.
Hazardous Waste	A waste or combination of wastes which, because of its quantity, concentration, or physical, chemical, or infectious characteristics, may either cause or significantly contribute to an increase in mortality or an increase in serious irreversible illness; or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed. Regulated under RCRA.
Hazardous Waste Accumulation Area	An area which may store hazardous wastes for up to 90 days.
Hazardous Waste Storage Area	An area which may store hazardous waste for up to 1 year.
Historic	A period of time after the advent of written history dating to the time first Euro-American contact in an area. Also refers to items primarily of Euro-American manufacture.
Historic District	National Register of Historic Places designation of a geographically defined area (urban or rural) possessing a significant concentration, linkage, or continuity of sites, structures, or objects united by past events or aesthetically by plan of physical development.

Impacts	An assessment of the meaning of changes in all attributes being studied for a given resource; an aggregation of all the adverse effects, usually measured using a qualitative and nominally subjective technique.
Infrastructure	The basic installations and facilities on which the continuance and growth of a locale depend (roads, schools, power plants, transportation, and communication systems).
Installation Restoration Program (IRP)	A program established by the Department of Defense to meet requirements of CERCLA of 1980 and SARA of 1986, 42 U.S.C. §9601 note (West 1998) which identifies, assesses, and cleans up or controls contamination from past hazardous waste disposal practices and hazardous material spills.
Land Use Plans And Policies	Guidelines adopted by governments to direct future land use within their jurisdictions.
Level Of Service (LOS)	In transportation analysis, a qualitative measure describing operational conditions within a traffic stream and how they are perceived by motorists and/or pedestrians. In public services, a measure describing the amount of public services available to community residents, generally expressed as the number of personnel providing service per 1,000 population.
Liquefaction	The transformation during an earthquake of unconsolidated, water-saturated sediment into a liquid form.
Long Term	Impacts that would occur over an extended period of time, whether they start during the construction or operations phase. Most impacts from the operations phase are expected to be long term since program operations essentially represent a steady-state condition (i.e., impacts resulting from actions that occur repeatedly over a long period of time). However, long-term impacts could also be caused by construction activities if a resource is destroyed or irreparably damaged or of the recovery rate of the resource is very slow.
Mano	From the Spanish *la mano* ("hand"), a loaf-shaped handstone used for grinding seeds, pigments, and so forth, on a metate or millingstone.
Marsh	A type of wetland that does not accumulate appreciable peat deposits and is dominated by herbaceous vegetation. Marshes may be either fresh or salt water and tidal or nontidal.
McKinney Act, 42 U.S.C. §11301 *et seq.*	The McKinney Act gives recognized providers of assistance to the homeless a high priority in acquiring unneeded land and buildings on Federal properties. The property can be used only for the homeless and only for 2 years. Homeless providers must be able to finance upgrades of facilities, pay a proportionate share of municipal service costs, and fund its program operations.
Metate	From the Aztec *metarl*, a stone slab upon which corn and other grains are milled with a mano (worked with a push-pull motion). Metates of Mexican influence are usually rectangular slabs of vesicular basalt with 3 legs.

Midden	A deposit marking a former habitation site and containing such materials as discarded artifacts, bone and shell, food refuse, charcoal, ash, rock, human remains, structural remnants, and other cultural leavings.
Migratory Bird Treaty Act, 16 U.S.C. §703 *et seq.*	This act prohibits the taking or harming of a migratory bird, its eggs, nests, or young without the appropriate permit.
Millingstone	An amorphous or roughly shaped stone slab upon which seeds and other plant products are ground with the aid of a mano. The milling basin of the slab may be ovoid to round, depending on the elliptical or rotary motion of the handstone.
Mitigation	A method or action to reduce or eliminate program impacts.
Mortar	A stone or wooden bowl-like artifact in which seeds, berries, meat, and other products are ground or pulverized with a pestle. Mortars occur in bedrock outcrops and as portable items.
Multi-Family Housing	Townhouse or apartment units that accommodate more than 1 family though each dwelling unit is only occupied by 1 household.
National Environmental Policy Act (NEPA), 42 U.S.C. §4321 *et seq.*	Public Law 91-190, passed by Congress in 1969, established a national policy designed to encourage consideration of the influence of human activities on the natural environment. NEPA also established the Council on Environmental Quality. NEPA procedures require that environmental information be made available to the public before decisions are made.
National Historic Preservation Act (NHPA), 16 U.S.C. §470 *et seq.*	The NHPA protects cultural resources. Section 106 of the act requires a Federal agency to take into account the potential effect of a proposed action on properties listed on or eligible for listing on the National Register of Historic Places.
National Pollution Discharge Elimination System (NPDES)	The NPDES is a provision of the Clean Water Act which prohibits discharge of pollutants into waters of the United States unless a special permit is issued by the EPA or state.
National Priorities List (NPL)	A list of sites (Federal and state) where releases of hazardous materials may have occurred and may cause an unreasonable risk to the health and safety of individuals, property, or the environment.
National Register Resources	Properties listed on the National Register of Historic Places, properties formally determined eligible for listing on the National Register, and those properties appearing to qualify for listing on the National Register.
Native American Graves Protection and Repatriation Act (NAGPRA), 25 U.S.C. §3001 *et seq.*	NAGPRA defines the ownership and control of Native American human remains and associated funerary objects discovered or recovered from Federal or tribal land.
Native Americans	Used in the collective sense to refer to individuals, bands, or tribes who trace their ancestry to indigenous populations of North America prior to Euro-American contacts.

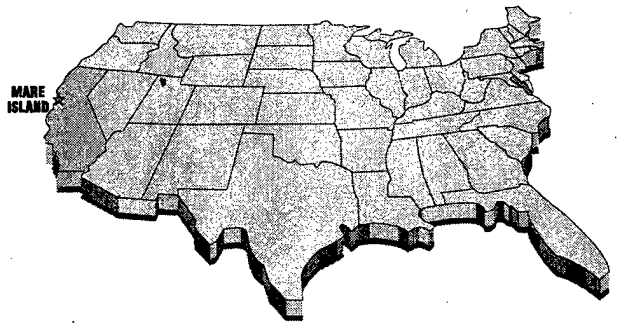
Native Vegetation	Plant life that occurs naturally in an area without agricultural or cultivational efforts. It does not include species that have been introduced from other geographical areas and have become naturalized.
Natural Gas	A natural fuel containing primarily methane and ethane that occurs in certain geologic formations.
Nonnative species	Species that have invaded or been introduced into an area.
Organotin	A family of alkyl tin compounds widely used as stabilizers for plastics, especially rigid vinyl polymers used as piping, construction aids, and cellular structures. Some have catalytic properties. They include butyl tin trichloride, dibutyltin oxide, etc., and various methyltin compounds. They are both liquids and solids. All are highly toxic.
Obsidian	Natural volcanic glass. This was the premier material for chipped-stone artifacts in California, where it was obtained from no less than 25 separate sources.
PCB-Contaminated Equipment	Equipment which contains a concentration of PCBs from 50 to 449 ppm or greater. Disposal and removal are regulated by the EPA.
Peak Hour	The hour of highest traffic volume on a given section of roadway between 7:00 a.m. and 9:00 a.m. or between 4:00 p.m. and 6:00 p.m.
Permit	An authorization, license, or equivalent control document to implement the requirements of an environmental regulation.
Pestle	An elongate, often cylindrical stone or wooden artifact used to pulverize food products and other stuff in a mortar.
Phase	A distinctive archeological unit representing a fairly brief interval of time within a locality or region. A phase may be a single component at 1 side or a prolonged occupation of numerous related sites (Wiley and Phillips 1958).
Polychlorinated Biphenyls (PCBs)	Any of a family of industrial compounds produced by chlorination of biphenyl. These compounds are noted chiefly as an environmental pollutant that accumulates in organisms and concentrates in the food chain with resultant pathogenic and teratogenic effects. They also decompose very slowly.
Potable Water	Water that is suitable for drinking.
Prehistoric	The period of time before the written record.
Prehistory	The archeological record of nonliterate cultures; the cultural past before the advent of written records.
Preliminary Assessment (PA)	The preliminary assessment identifies areas of potential contamination and evaluates each area to determine if a threat to human health or the environment exists. A PA report is developed from readily available information such as past inventory records, aerial photographs, employee interviews, existing analytical data, and a site visit. A PA may recommend no further action, additional work, or a removal action.

Radiation	Any form of energy propagated as rays, waves, or streams of energetic particles. The term is frequently used in relation to emission of rays from the nucleus of an atom.
Radioactive Material	A material that spontaneously emits ionizing radiation.
Radon	A colorless naturally occurring, radioactive, inert gaseous element formed by radioactive decay of radium in soil or rocks.
Record Of Decision (ROD)	The document prepared under the Federal government that documents the reasoning behind the decision.
Recycling	The process of minimizing the generation of waste by recovering usable products that might otherwise become waste.
Region of Influence	For each resource, the region affected by the proposed action or alternatives and used for analysis in the affected environment and impact discussion.
Remedial Action (RA)	During the remedial action (RA) phase, the selected cleanup technology is implemented. RA can be as simple as soil excavation or as complicated as a complete ground water treatment system which may operate for many years. Remedial action work plans for long term remediations will include Operation and Maintenance (O&M) plans. O&M efforts continue until the cleanup is complete.
Remedial Action Plan (RAP)	The document prepared under the state government that documents the reasoning behind the selection of a particular cleanup alternative.
Remedial Design (RD)	After the RAP/ROD is signed, remedial design (RD) can begin. During the RD phase, specific construction parameters and equipment specifications are prepared for the selected cleanup alternative.
Remedial Investigation (RI)	This investigation is performed to more fully define the nature and extent of the contamination at a site and evaluate possible methods of cleaning up the site. During the investigation, ground water, surface water, soil, sediment, and biological samples are collected and analyzed to determine the type and concentration of each contaminant. Samples are collected at different areas and depths to help determine the spread of contamination.
Removal Actions	In the event of an immediate threat or potential threat to human health or the environment, a short term mitigating or cleanup action may be implemented. The goal of the removal action is to isolate the contamination hot spot and their source from all biological receptors. Usually, removal actions do not completely clean up a site, and additional remediation steps are required.
Resource Conservation And Recovery Act (RCRA), 42 U.S.C. §6901 *et seq.*	RCRA was enacted in 1976 as the first step in regulating the potential health and environmental problems associated with hazardous waste disposal. RCRA and the regulations developed by EPA to implement its provisions provide the general framework of the national hazardous waste management system, including the determination of whether hazardous wastes are being generated, techniques for tracking wastes to eventual disposal, and the design and permitting of hazardous waste management facilities.

Runoff	The noninfiltrating water entering a stream or other conveyance channel shortly after a rainfall event.
Safe Drinking Water Act (SDWA), 42 U.S.C. §300f *et seq.*	The SDWA establishes the amount of concentrated contaminants allowable in public drinking water. The SDWA also reviews Federal agencies which maintain public water supply or contribute to groundwater contamination following all applicable requirements issued by the state.
Seismicity	Relative frequency and distribution of earthquakes.
Short Term	Transitory effects of the proposed program that are of limited duration and are generally caused by construction activities or operations start-up.
Significance	The importance of a given impact on a specific resource as defined under the Council on Environmental Quality regulations.
Single-Family Housing	A conventionally built house consisting of a single dwelling unit occupied by 1 household.
Site	The location of past cultural activity; a defined space with more or less continuous archeological evidence.
Site Discovery (SD)	A site is an area that has or has had the potential for a hazardous substance release. A single facility may contain several sites to be studied. Potential sites are occasionally discovered by searching through records or during construction projects.
Site Inspection (SI)	An inspection conducted after a preliminary assessment when additional information is needed to evaluate the site. The collection and analysis of soil, sediment, and surface or ground water samples may help determine the need for further study. The SI collects any information needed for hazard ranking. The SI may recommend a site for no action, further study, or an immediate removal action.
Soil	A natural body consisting of layers or horizons of mineral and/or organic constituents of variable thickness and differing from the parent material in their morphological, physical, chemical, and mineralogical properties, and biological characteristics.
Soil Types	A category or detailed mapping unit used for soil surveys based on phases or changes within a series (e.g. slope, salinity).
Solid Waste Management	Supervised handling of waste materials from their source through recovery processes to disposal.
State Historic Preservation Officer (SHPO)	The official within each state, authorized by the state at the request of the Secretary of the Interior, to act as a liaison for purposes of implementing the National Historic Preservation Act.
Stratigraphy	The study of cultural and natural strata or layers in archeological and geological deposits, particularly with the aim of determining the relative age of strata.

Superfund Amendments And Reauthorization Act (SARA), 42 U.S.C. §9601 note (West 1995)	SARA was enacted in 1986 to increase the Superfund to $8.5 billion, modify contaminated site cleanup criteria scheduling, and revise settlement procedures. It also provides a fund for leaking underground storage tank cleanups and a broad, new emergency planning and community right to know program.
Surface Water	All water naturally open to the atmosphere and all wells, springs, or other collectors which are directly influenced by surface water.
Threatened Species	Plant and wildlife species likely to become endangered in the foreseeable future.
Toxic	Harmful to living organisms.
Toxic Substances Control Act (TSCA), 15 U.S.C. §2601 *et seq.*	TSCA provides authority to test and regulate chemicals to protect human health. Substances regulated under TSCA include asbestos and PCBs.
Trait	Any definable element or feature of culture suitable for comparative purposes.
Transfer	Deliver US government property accountability to another Federal agency.
Tribelet	The basic, autonomous, self-governing, and independent sociopolitical group in aboriginal California; an aggregation of several villages under the authority of a single chief (Kroeber 1925).
US Environmental Protection Agency	The independent Federal agency established in 1970 to regulate Federal environmental matters and oversees the implementation of Federal environmental laws.
Waters Of The United States	Waters that are subject to Section 404 of the Clean Water Act. These include both deep water aquatic habitats and special aquatic sites, including wetlands.
Wetlands	Areas that are inundated or saturated with surface or groundwater at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil. This classification includes swamps, marshes, bogs, and similar areas. Jurisdictional wetlands are those wetlands that meet the vegetation, soils, and hydrology criteria under normal circumstances (or meet the special circumstances as described in the US Army Corps of Engineers, 1987 wetland delineation manual where 1 or more of these criteria may be absent) and are a subset of "waters of the United States."
Wildlife Refuge	An area designated for the protection of wild animals, within which hunting and fishing are either prohibited or strictly controlled.
Zoning	The division of a municipality into districts for the purpose of regulating land use, types of buildings, required yards, necessary off-street parking, and other prerequisites to development. Zones are generally shown on a map and the text of the zoning ordinance specifies requirement for each zoning category.

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10.0 RESPONSE TO COMMENTS

10.1	INTRODUCTION	10-1
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10. RESPONSE TO COMMENTS ON THE DEIS/EIR

10.1 INTRODUCTION

The Draft Environmental Impact Statement/Environmental Impact Report (Draft EIS/EIR) for the Disposal and Reuse of Mare Island Naval Shipyard was circulated for public and agency review from August 28, 1995, to October 16, 1995. The lead agencies, the US Navy and the City of Vallejo, held a public hearing on September 27, 1995, to provide the public with an opportunity to comment on the content and accuracy of the Draft EIS/EIR. In addition, written comments on the EIS/EIR were accepted throughout the review period.

In accordance with National Environmental Policy Act (NEPA) regulations and guidelines for the California Environmental Quality Act (CEQA), a final environmental impact statement /environmental impact report shall provide responses to comments on the Draft EIS/EIR, 40 C.F.R. §1503.4; CEQA Guidelines §15132. In compliance with those regulations and guidelines, this response to comments chapter to the Final EIS/EIR presents all of the written and public hearing comments received during the review period, followed by responses to the substantive environmental issues raised in the comments.

This chapter also presents a list of agencies, organizations, and individuals commenting on the Draft EIS/EIR. The list is followed by copies of all comment letters and the portion of the public hearing transcript containing public comments. Individual comments within each letter or portion of the transcript are identified by a letter and number and responses to each comment are presented on the facing page. If a comment does not relate to a substantive environmental issue or expresses an opinion or fact, it is acknowledge by the words "comment noted."

10.2 AGENCY AND INDIVIDUAL COMMENTS ON DEIS/EIR

Letter	Commenter	Letter or Comment Date
A	US Coast Guard	December 19, 1995
B	US Environmental Protection Agency	October 13, 1995
C	US Department of the Interior, National Park Service	October 26, 1995
D	US Department of the Interior, Office of Environmental Policy and Compliance	October 20, 1995
E	US Department of the Army, San Francisco District, Corps of Engineers	December 4, 1995
F	US Department of Commerce, National Oceanographic and Atmospheric Administration, National Marine Fisheries Service	March 29, 1996
G	California State Lands Commission	October 13, 1995
H	California Department of Transportation	October 16, 1995
I	California Environmental Protection Agency, Department of Toxic Substances Control	October 26, 1995
J	San Francisco Bay Conservation and Development Commission	October 30, 1995
K	San Francisco Bay Conservation and Development Commission	November 6, 1995
L	California Regional Water Quality Control Board	November 3, 1995
M	Vallejo City Unified School District	October 30, 1995
N	National Trust for Historic Preservation	October 12, 1995
O	Napa - Solano Audubon Society	October 25, 1995
P	Solano County Farmlands and Open Space Foundation	October 30, 1995
Q	Mr. Blair Duque	September 30, 1995
R	Mr. Donald E. Babb	October 26, 1995
S	Ms. Diana Krevsky	October 26, 1995
PHA	Mr. Neil Havlik	September 27, 1995
PHB	Mr. John Osborne	September 27, 1995
PHC	Mr. William Johnson	September 27, 1995
PHD	Mr. Burle Southard	September 27, 1995

10.3 LETTERS FROM AGENCIES / INDIVIDUALS AND RESPONSES

The following provides the agency and individual letters providing comments on the Draft EIS/EIR. Comments have been numbered in the margin of each letter. Written responses to each comment follow the comment letter.

U.S. Department of Transportation
United States Coast Guard

Commander (oan-br)
Eleventh Coast Guard District

Bldg. 10, Room 214
Coast Guard Island
Alameda, CA 94501-5100
Phone: (510) 437-3514
Fax: (510) 437-5836

16591
Napa R Gen'l
December 19, 1995

Jerry Hemstock
USN Engineering Field Activity West
Code 185JH
900 Commodore Drive
San Bruno, CA 94066-5006

Dear Mr. Hemstock:

Thank you for providing me a copy of the DEIS for the Mare Island Naval Shipyard Disposal and Reuse. These comments address the bridges at Mare Island; other Coast Guard offices may have already provided comments on the continuing use of Coast Guard Station Mare Island.

The widening of the Rte 37 Bridge will require a Coast Guard bridge permit. I would expect that the existing navigational clearances would be preserved, and those meet the reasonable needs of navigation. I also expect that such widening would be funded by FHWA, in which case the Coast Guard would serve as a cooperating agency in the environmental review process. A-1

Similarly, the construction of a southern crossing will also require a Coast Guard bridge permit. For planning purposes, a structure similar to the Rte 37 bridge should be considered, rather than a movable bridge. This will minimize transportation conflicts. A-2 Such a bridge will need greater vertical clearance than the Rte 37 bridge to accommodate oceangoing vessels. A minimum vertical clearance of 138 feet over Mean High Water will be required. A-3 As above, if the FHWA will fund the project, the Coast Guard will serve as a cooperating agency in the environmental review process. If there is no FHWA funding, the Coast Guard will serve as lead federal agency. A-4 We will ask the City of Vallejo to keep us informed about that project, and we will serve on any project planning committees that are established. Such a project will require an Environmental Impact Statement.

Your DEIS notes that the Mare Island Causeway bridge interrupts highway traffic during openings for vessel traffic. The Coast Guard regulates the operation of drawbridges, and the bridge has an operating regulation that provides closed periods during the morning and afternoon commute periods. The regulation reads as follows: A-5

§117.169 Mare Island Strait, Napa River, and their tributaries.

(a) The draw of the U.S. Navy bridge (Mare Island Causeway), mile 2.8, at Vallejo--

(1) Must be opened on signal from 7:30 a.m. to 3:45 p.m. and 4:45 p.m. to 10 p.m. Monday through Friday except Federal holidays, and from 6:30 a.m. to 10 p.m. on Saturdays, Sundays, and holidays;

(2) Need not be opened for the passage of vessels, other than public vessels of the United States, from 6:30 a.m. to 7:30 a.m. and 3:45 p.m. to 4:45 p.m., except Saturdays, Sundays, and Federal holidays; and

(3) Must be opened on signal from 10 p.m. to 6:30 a.m. daily, if at least two hours notice is given, and as soon as possible during this period for public vessels of the United States.

A-5

When the shipyard goes into caretaker status, we will evaluate the continued need for this regulation and may eliminate the commute hour closures until development on the facility reaches a point where closures are again necessary. We will work with the City of Vallejo to insure that the bridge operation has the minimum impact on navigation, consistent with the needs of overland traffic. Please notify me when the bridge operation is transferred to the city.

A-6

A-7

Thank you for providing the DEIS. I recognize that the FEIS is under preparation and you may not be able to incorporate these late comments, but please consider them in your planning process. If you have any questions concerning this letter or Coast Guard jurisdiction, please give me a call at the number above.

A-8

Sincerely,

W. R. Till
Chief, Bridge Section
By direction of the District Commander

Copy to: City of Vallejo, Attn: Ann Meredith
Caltrans District 4
FHWA, Sacramento

Response to Comments

Response to Comment A-1. While proposed changes to the Route 37 bridge were not part of the project evaluated in this EIS/EIR, the transportation analysis included reasonably foreseeable modifications to the regional transportation system in the transportation impacts analysis. Modifications to the Route 37 bridge would occur under the purview of Caltrans and would undergo separate environmental documentation and permitting processes. As noted by the commenter, such a project would require a Coast Guard bridge permit and, if widening was supported by FHWA funding, the Coast Guard would likely serve as a cooperating agency for the required project-specific environmental review.

Response to Comment A-2. It is acknowledged that construction of the southern crossing would require a Coast Guard bridge permit. The commenter's recommendation that this structure be similar to the Route 37 bridge so as to minimize transportation conflicts is noted.

Response to Comment A-3. The requirement for vertical clearance of 138-feet over mean high water is noted. Bridge design issues would be addressed in project-specific environmental review prior to approval of a bridge project.

Response to Comment A-4. The anticipated role of the Coast Guard in the future environmental review process for the southern crossing and the request that Vallejo keep the agency informed is noted. It is acknowledged that a specific proposal for a bridge would require subsequent CEQA documentation and, potentially, additional NEPA documentation. Any additional NEPA documentation would be under the purview of the project proponent, and would be the appropriate local agency's responsibility. There would also be substantial agency consultation and coordination required as part of the environmental and permitting process for the southern crossing bridge.

Response to Comment A-5. The current regulations for operating the Causeway bridge identified by the commenter are noted. It is acknowledged that the Coast Guard will evaluate the continued need for these regulations. Since closure of the shipyard in April 1996, the commute hour closures have been eliminated.

Response to Comment A-6. It is acknowledged the Coast Guard will work with Vallejo to ensure that continued operation of the Causeway bridge has minimal impact on navigation.

Response to Comment A-7. The Navy will notify the Coast Guard when the bridge operation is transferred to Vallejo. The city now operates the bridge under the Cooperative Agreement.

Response to Comment A-8. The comments from the Coast Guard will be considered throughout the facility closure and reuse planning process.

Letter B

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

OCT 13 1995

Mr. Jerry Hemstock, Code 185JH
Engineering Field Activity West
900 Commodore Drive
San Bruno, California 94066-5006

Dear Mr. Hemstock:

The Environmental Protection Agency (EPA) has reviewed the Draft Environmental Impact Statement/Environmental Impact Statement (EIS/EIR) for the project entitled **Mare Island Naval Shipyard Disposal and Reuse**, Solano County, California. Our review is provided pursuant to the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations (40 CFR Parts 1500-1508) and Section 309 of the Clean Air Act.

Mare Island Naval Shipyard has been identified for closure and disposal pursuant to the Defense Base Closure and Realignment Act of 1990, as amended (P.L. 101-510). Mare Island shipyard operations ceased in April 1995 and facility closure is scheduled for April 1996.

Mare Island comprises 1,650 acres of dry land and 3,810 acres of wetlands and submerged land. It is bounded by San Pablo Bay, Napa Marsh, and the Carquinez and Mare Island Straits. The naval shipyard is developed with approximately 960 buildings totaling 10.5 million square feet. In addition to naval industrial activities, the Mare Island Naval Shipyard facilities have supported industrial, office, residential, educational, commercial, recreational, cultural and institutional uses. The shipyard has operated since 1854 and has been used for docking, building and overhauling naval ships and submarines.

The Draft EIS/EIR develops and analyzes one disposal and three reuse alternatives. The Proposed Action entails buildout of the Reuse Plan developed through the Vallejo community reuse planning process. The goal of the reuse plan is to use existing facilities and resources on Mare Island to generate new jobs, revenue and recreational opportunities for the City of Vallejo's residents. The Reuse Plan includes: regional park development; golf course expansion; rifle range relocation; dredge pond reactivation; substantial industrial, commercial and community use, including development of a marina; and, construction of a

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bridge across the Mare Island Strait to Vallejo (the "southern crossing"). Reuse alternatives include a Medium Density Alternative, which would be a less intensive version of the Reuse Plan, an Open Space Alternative, and a No Action Alternative, which would retain Mare Island in Federal caretaker status. Mare Island reuse is analyzed at a general level of detailed; the Navy does not intend the document to assess site-specific development options.

Based upon our review, we have classified the Draft EIS/EIR as EC-2, Environmental Concerns - Insufficient Information (see attached *Summary of the EPA Rating System*). This rating reflects our conclusion that while the analysis does contain an informative discussion of the proposed action, several specific issues should be discussed in greater detail in the Final EIS/EIR. Our detailed comments are enclosed. B-1

We appreciate the opportunity to comment on the proposed project and request that two copies of the Final Environmental Impact Statement be sent to my attention (mail code E-3-1) at the letterhead address at the same time it is filed with our Washington, D.C. office. If you have any questions or wish to discuss any aspect of our comments, please contact me at (415) 744-1584 or Jeff Philliber of my staff at (415) 744-1570.

Sincerely,

Laura Fujii, Actng for

David J. Farrel, Chief
Office of Federal Activities

Enclosures: (2)
Attachment A: EPA Rating System (1 page)
Attachment B: EPA Draft EIS/EIR Comments (5 pages)

2293MARE.DS.JP

Cc: Ms. Ann Merideth, Director, Development Services Department, City of Vallejo

SUMMARY OF RATING DEFINITIONS AND FOLLOW-UP ACTION

Environmental Impact of the Action

LO-Lack of Objections

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC-Environmental Concerns

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

EO-Environmental Objections

The EPA review has identified significant environmental impacts that must be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU-Environmentally Unsatisfactory

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of environmental quality, public health or welfare. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommend for referral to the Council on Environmental Quality (CEQ).

Adequacy of the Impact Statement

Category 1-Adequate

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2-Insufficient Information

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

Category 3-Inadequate

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From: EPA Manual 1640, "Policy and Procedures for the Review of Federal Actions Impacting the Environment."

EPA DRAFT EIS/EIR COMMENTS, MARE ISLAND NAVAL SHIPYARD DISPOSAL AND REUSE, VALLEJO, CALIFORNIA, OCTOBER 16, 1995

Air Quality

1. Page 3-151: The Draft EIS/EIR air quality setting section does not characterize current Mare Island "baseline" air quality conditions. The Draft EIS/EIR instead discusses setting conditions in terms of 1990 and 1993 emissions levels, although shipyard operations have subsequently ceased at Mare Island. By using historic rather than closure emissions levels to determine baseline conditions, the analysis understates the impact of future air emissions on or around Mare Island. For the purposes of this analysis, baseline conditions should be those conditions immediately prior to project commencement (disposal), long after the facility is scheduled to close. . . B-2

   The Draft EIS/EIR states that "the closure of Mare Island Naval Shipyard will result in the shutdown of numerous stationary emission sources." It is not clear from this statement whether industrial-related air emissions continue at Mare Island despite the cessation of shipyard activities. According to the Draft EIS/EIR, all Mare Island shipyard operations ceased in April 1995 while actual closure would not occur until April 1996.

   We are concerned that without an accurate depiction of baseline conditions, air quality impacts cannot be fully understood. Information about existing air quality levels should be fully presented in the Final EIS/EIR, as it could enhance the public's understanding of and involvement in future air quality planning and decisionmaking. For example, Vallejo's residents have an interest in how and where the Navy may use future Mare Island emissions reduction credits--such decisions will affect future air pollutant emissions at Mare Island and in the vicinity. B-3

2. Page 4-124: The Draft EIS/EIR presents criteria pollutant emissions estimates for vehicle travel for each alternative (Table 4-23), but does not offer similar projections for stationary sources. According to the Draft EIS/EIR, reuse-related stationary emission source impacts at Mare Island would be less than significant due to the Bay Area Air Quality Management District (BAAQMD) regulatory process and the Navy's ability to maintain permits and/or transfer emission reduction credits (ERC) for Mare Island's existing and recently-operated stationary emission sources. Although this rationale may be consistent with cited air quality regulations, it does not fulfill the Navy's NEPA requirement to disclose and analyze impact information in the EIS/EIR. We recommend that the Navy present criteria pollutant B-4

emissions estimates, particularly for carbon monoxide and ozone precursors, for each of the alternatives in the Final EIS/EIR. B-4

Biological Resources

1. 3-79: Mare Island contains approximately two percent of the remaining marshland in the Bay Area, along with 215 acres of non-tidal wetlands, 813 acres of tidal wetlands, and 476 acres of active dredge ponds. In addition, the California freshwater shrimp, which is listed as an endangered species by both U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Game, is known to inhabit areas in the vicinity of Mare Island. Other endangered and special status invertebrates normally inhabit various types of marsh, wetlands and vernal pools. In spite of this, the Draft EIS/EIR reports that no surveys for invertebrate species have been performed at Mare Island. We recommend that the Navy undertake such a survey and incorporate the results in the Final EIS/EIR. B-5

2. 4-54: Mare Island contains over 1,500 acres of wetlands. Upon disposal of the Navy's facilities to non-federal agencies, the Navy would no longer be able to control or protect those sensitive habitats from future impacts. Executive Order 11990 directs the Navy to "avoid to the extent possible the long and short term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands . . . in carrying out (each agency's) responsibilities for . . . disposing of Federal lands and facilities . . . When Federally-owned wetlands or portions of wetlands are proposed for lease, easement, right-of-way or disposal to non-Federal public or private parties, the Federal agency shall (a) reference in the conveyance those uses that are restricted under identified Federal, State or local wetlands regulations; and (b) attach other appropriate restrictions to the uses of properties by the grantee or purchaser and any successor, except where prohibited by law; or (c) withhold such property from disposal." In accordance with the Navy's obligations under E.O. 11990, we recommend that the Final EIS/EIR contain conveyance restrictions for wetland areas as mitigation that would be carried forth to the Record of Decision (ROD). B-6

In our experience, conveyance restrictions can be developed which achieve the level of protection specified in E.O. 11990 and yet which afford non-federal recipients of federal property the flexibility to use their land in a reasonable B-7

manner. In such cases, a wetlands management plan is developed for the property in consultation with the USFWS and/or EPA. In order to develop, degrade or otherwise "take" any portion of the wetlands protected under the management plan, the future property recipient must propose an amendment to the plan which meets the approval of the USFWS and/or EPA (this may involve an agreement by the property recipient to mitigate wetlands impacts on- or off-site). We would be pleased to further discuss this strategy with the Navy. B-7

Water Resources

1. Page 4-66: We understand that maintenance dredging in the Mare Island Strait and disposal of subsequent dredge material eventually will be proposed as part of the reuse of Mare Island. Although the scope of any such dredging has not yet been determined, the Draft EIS/EIR acknowledges the various types of impacts that could be associated with dredging activity in the Mare Island Strait. We understand that the U.S. EPA, U.S. Army Corps of Engineers, Bay Conservation and Development District and the San Francisco Regional Water Quality Control Board are currently involved in the dredge planning effort for this site. We look forward to reviewing the appropriate NEPA documentation when the dredging plan is defined and a permit application is undertaken. B-8

Hazardous Materials and Waste

1. Page 4-160: The Draft EIS/EIR reports that "complete removal of (ordnance and live ammunition) may be technically difficult because it is submerged. However, prior to opening these areas for unrestricted redevelopment or public recreation, the sites will be inspected and cleaned up to levels protective of human health and the environment." We are concerned that areas harboring or potentially harboring submerged live ammunition would be opened to "unrestricted redevelopment or public recreation." If it is not possible or even practical to remove all submerged live ammunition from an area, that area should not be used in an unrestricted manner by anyone who might dig, excavate or otherwise disturb subsurface soil. B-9

Cumulative Impacts

1. 5-3: The Draft EIS/EIR cumulative impacts analysis purports to compare the projected effects of the proposed action to other past, present, and reasonably foreseeable future B-10

projects" in the region, including "individually minor but collectively significant" projects. The analysis does not identify any of these projects, however, nor does it seek to characterize projected cumulative development in an aggregate manner. This lack of information does not support the conclusions that "no significant impacts" would occur for each impact area under analysis. The Final EIS/EIR should identify the major approved and proposed projects in the area. We recommend that these be presented graphically in geographic relation to Mare Island. In addition, the Final EIS/EIR cumulative impacts analysis should include some cumulative statistics pertaining to future projects, development and growth in the area. B-10

Land Use

1. Page ES-13: The Draft EIS/EIR reports that "disposal of the federal surplus property would not impact land use on Mare Island. Buildout of the Reuse Plan would, in most cases, result in land uses similar to existing land uses." This understates the actual land use impact of the proposed action. Under the baseline conditions (caretaker status) of Mare Island, no intensive land uses should be expected. The Reuse Plan would result in uses similar to *past* or historic land uses at Mare Island; those uses would be far more intensive than exist under baseline conditions. Consequently, the Final EIS/EIR should describe projected land use impacts in terms of Mare Island baseline conditions. B-11

Miscellaneous

1. The Draft EIS/EIR Summary of Significant Environmental Impacts and Mitigations Table (Table ES-1) should include a column or other provision to indicate significance of impacts after mitigation. This allows the reader to quickly assess the proposed action's or alternative's major issues and impacts. B-12

2. The Navy is required by 40 CFR 1502.14(e) and 1505.2(b) to identify an Environmentally Preferable Alternative in the EIS/EIR. EPA strongly encourages the Navy to focus on developing a Preferred Alternative that best balances environmental quality with the needs and objectives of the Navy, the City of Vallejo and surrounding communities. B-13

   The major environmental difference between the proposed Reuse Plan and the Medium Density Alternative seems to be the Reuse Plan's inclusion of the "Southern Crossing," a

second bridge between Mare Island and Vallejo. This feature, which is presented as necessary for the Reuse Plan, would be responsible for increased land use, air quality, noise, and biological resources impacts. It would also directly affect Vallejo neighborhoods that would otherwise be insulated from the project. We support the Reuse Plan's objectives of sustained employment opportunities and other benefits to the region, but we find the southern crossing, as proposed, to be an obstacle to optimal environmental quality. We recommend that an environmentally preferable alternative incorporate the beneficial elements of the proposed Reuse Plan while redesigning or reconfiguring the southern crossing concept to avoid, to the maximum extent possible, the degree adverse effects that it poses.

B-13

Response to Comments

Response to Comment B-1. Comment noted. The commenter's concerns are addressed in responses to specific comments, below. Two copies of the Final EIS/EIR will be provided as requested.

Response to Comment B-2: Both the Draft and Final EIS/EIR describe 5 activity scenarios: 3 alternative reuse intensities, a post-closure no action (caretaker status) alternative, and a description of preclosure activity levels. For purposes of comparison, the emission estimates for each of these 5 scenarios have been presented in a single table.

The 1994 Clean Air Plan for the San Francisco Bay area includes emission forecasts based on land use and traffic conditions from the early 1990s. Those conditions reflect Mare Island Shipyard as an active facility. The Navy considers it appropriate to evaluate ozone precursor emissions and air quality plan consistency issues in the context of preclosure activity levels, since the current air quality plan has a similar basis.

The closure process at Mare Island creates a shifting condition of activity that includes caretaker activities, site remediation activities, and activities of tenants participating in a program of interim leases prior to the final property transfer decision. Buildings occupied by caretaker staff require normal heating, ventilation, and lighting. Facilities occupied under interim leasing arrangements may also require full heating, ventilation, and lighting. In addition, stationary sources associated with specific buildings are being operated under some of the existing interim leases. Unoccupied buildings require a reduced maintenance level of heating and ventilation.

The EIS/EIR includes the current disposition of stationary sources at Mare Island. As indicated in EIS/EIR Table 3-21, the Navy has terminated 20 stationary source permits and either banked resulting emission reduction credits or moved the equipment to other facilities. Over 100 other stationary sources (mostly small sources exempt from permit requirements) have also been taken out of service. Out of a preclosure inventory of 410 stationary sources, 285 have been transferred to either the LRA or to interim lease tenants.

Response to Comment B-3: The Navy has coordinated with the LRA in making decisions to either maintain or cancel permits for stationary sources at Mare Island. The present status of these decisions is outlined in EIS/EIR Table 3-21. Appendix H provides a detailed listing of individual stationary sources and their current disposition. In general, permits have been maintained in an active status where stationary sources have a reasonable chance of near term use. Relatively few permits have been converted to emission reduction credits. A large number of stationary sources (and any associated permits) have been transferred to the LRA, with an additional 60 sources transferred to interim lease tenants. It is unlikely that reuse plans for Mare Island will be dependent on the Navy's disposition of emission reduction credits from the shutdown or removal of stationary sources at Mare Island.

Response to Comment B-4: Land use and economic analyses developed in connection with the reuse plans provide adequate employment and building square footage estimates to allow generalized estimates of traffic generation. The traffic generation estimates, in turn, provided a basis for estimating emissions associated with vehicle travel. The alternative reuse plans are presented at a very generic level, similar to generalized land use category designations found in the Vallejo General Plan. There are no specific proposals for the size or nature of future industrial development on Mare Island. A generalized industrial land use designation cannot be translated into relevant parameters concerning the size and nature of industrial processes, quantities of chemical and solvents used, or quantities of fuel used for process heat or steam. Consequently, any estimates of future stationary emissions cannot be used because new industries will have to comply with current and future stationary source regulations, not the regulations that apply to industries that were established in the Bay Area many years or decades ago.

Response to Comment B-5. Invertebrate surveys were not conducted for this EIS/EIR for several reasons. A search of the CNDDB did not identify any sensitive invertebrate species with the potential to occur in the types of habitat found on Mare Island. Although endangered and special status invertebrate species occur in the region, they occur in vernal pool and sand dune habitats, which are not present at Mare Island. During the scoping period for the project, USFWS identified the California freshwater shrimp as the only sensitive invertebrate species with the potential to occur in the project area. However, as concluded in EIS/EIR Section 3.6.3, no freshwater habitat for this species is present in the ROI. USFWS has concurred with the statement in the EIS/EIR that no impacts are expected to the California freshwater shrimp (see response to comment D-10). Most of the marsh and wetland habitat on Mare Island occurs on state reversionary land or on land subject to transfer to another Federal agency. Potential impacts of proposed uses on these lands are discussed in Section 5.5, Cumulative Impacts.

Response to Comment B-6 and Comment B-7. In accordance with Executive Order 11990, 42 Fed. Reg. 26951 (1997), the Navy and the USFWS, through the Section 7 consultation process, have established conservation easements on Federal surplus land at Mare Island for the protection of wetlands. Approximately 81 acres of sensitive habitat identified by USFWS in the Biological Opinion has been placed in conservation easements. All wetland areas on Mare Island not reverting to the State of California or being transferred to USFWS will be protected by these easements. It is anticipated that the Navy will execute the easements prior to conveyance of the property to the City of Vallejo or other non-Federal entity. The easements have been incorporated into the Final Reuse Plan and alternatives and FEIS/EIR figures and text revised accordingly (see Figures 1-5, 2-2, and Table 2-1). It is expected that the USFWS would hold the easement and that the City of Vallejo, or other non-Federal entity, would take ownership of the underlying fee. Holding the easement will allow the USFWS to restrict development through enforcement of its real estate rights as well as through its regulatory authority to protect endangered and threatened species. The Navy would not retain that responsibility after property disposal.

The establishment of these easements and the conveyance restrictions contained in these easements, provide protections for the wetland areas on Mare Island following disposal by the Navy. Any use of wetlands on land that will revert to the State of California by non-Federal public or private parties would require consultation with the USFWS to consider modification or replacement of the Navy/USFWS 1988 MOU regarding endangered species management in these lands. Reactivation of the dredge disposal ponds in this area would likely require a Section 10a consultation to acquire a "take permit". Should such a permit be granted, it would likely contain many of the same conditions and mitigations present in the 1988 MOU.

Response to Comment B-8. Dredging activities would not be carried out by the Navy; however, it is anticipated that the appropriate NEPA and CEQA documentation would be developed by the project proponent when a dredging plan for Mare Island Strait is defined.

Response to Comment B-9. Ordnance cleanup activities at Mare Island are ongoing. As discussed in Section 3.13.11, any plans for leasing, transferring, or disposing of DOD real property where ammunition and explosives contamination exists or is suspected to exist must be submitted to the DOD Explosives Safety Board for review and approval of explosive safety aspects. Prior to real property transfer the Navy will investigate and remove unexploded ordnance contamination to a level consistent with the protection of human health and the environment. Future property recipients will be advised and notified of the levels of remediation achieved and where appropriate, covenants, conditions or restrictions may be included in the deed to ensure protection of human health and the environment, taking into consideration the intended land uses.

Response to Comment B-10. The cumulative impacts discussion (Section 5.5) has been modified to reflect more detailed information on buildout in nearby North Bay communities obtained from local agency planners. Planning departments at Solano County and Napa County and at the cities of Vallejo, American Canyon, and Benicia were contacted to identify any specific projects that could affect cumulative growth in the area. Solano County planning staff noted that no significant development was anticipated in unincorporated areas of the southern part of the county. Napa County planning staff indicated that buildout of the Napa County Airport Industrial Area would be the major development over the next 25 years. According to Vallejo planning staff, no major cumulative projects are proposed for the city. The recent realignment of Mare Island Way and Wilson Avenue was the only planned or reasonably foreseeable project in the city. Cumulative projects for the City of American Canyon indicate growth in residential and commercial development in accordance with its general plan. The City of Benicia does not have any individual project cumulative development projections, but uses cumulative growth projections based on Association of Bay Area Governments (ABAG) projections and State Finance Department growth projections. The cumulative development information gathered through this process is described for each jurisdiction in EIS/EIR Section 5.5, Cumulative Impacts. Cumulative development is addressed through 2020, where information is available. Where no such information is available, cumulative development is described based on the available information; projections beyond that period would be speculative. Cumulative projects also include reuses of properties subject to Federal transfer and potential scenarios for reuse of dredge ponds on state reversionary land. The reader is referred to EIS/EIR Section 5.5 for the expanded cumulative analysis.

The incremental addition of new emission sources does not translate into automatic deterioration in regional air quality. Despite continual urban growth and the addition of new emission sources, the magnitude and frequency of violations of the Federal ozone standard has shown a clear downward trend over the last 20 years. The incremental addition of new emission sources has been more than offset by continuing improvements in emission controls for stationary, mobile, and area sources. The 1994 update and progress report for the Bay Area Clean Air Plan forecasts a continuing reduction in cumulative emissions of ozone precursors despite regional growth trends. In 1995 EPA changed the ozone status designation for the San Francisco Bay Area from nonattainment to attainment. However, because there were several violations of the Federal ozone standard in 1995 and 1996, EPA is proposing to change the Bay Area's ozone designation back to moderate nonattainment.

Response to Comment B-11. The community reuse plan attempts to locate new uses in those areas of the former base most adapted to specific new land uses. Intensity of land use under the Reuse Plan Alternative would be less than past military use, except for the increase in residential density. The significance criteria define significant impacts as occurring through conflicts with established land uses, disruption or division of land use configurations, or substantial alteration of present or planned land use. The conclusion regarding the magnitude of land use impacts under the reuse alternatives was reached because of the minimal change to the physical land use conditions that would occur. The intensity of use and the impacts resulting from the increase in population are discussed throughout the EIS/EIR specific to the types of resources that would be impacted (e.g., traffic, public services, jobs, housing).

Response to Comment B-12. Table 2-9, formerly ES-1, has been footnoted to indicate that unless otherwise indicated, significant and mitigable impacts have been mitigated to a level of nonsignificance. Impacts that are not mitigable to a level of nonsignificance have been identified as significant and not mitigable. The summary table provided in the EIS/EIR Executive Summary also provides an overview of the level of impacts, so that the reader can see the highest level of projected impact in each resource area. The summary tables at the beginning of each resource section also indicate the level of impacts described for each resource. Table 2-9, formerly ES-1, incorporates the information provided on these section summary tables.

Response to Comment B-13. Section 2.8, Environmentally Preferable/Environmentally Superior Alternative, has been added to the EIS/EIR and identifies the No Action Alternative as the NEPA Environmentally Preferable Alternative and the Open Space Alternative as the CEQA Environmentally Superior Alternative. Navy guidelines for NEPA documentation recommend that buildout of the community's adopted reuse plan be identified as the Preferred Alternative. The Preferred Alternative (Mare Island Final Reuse Plan), was developed by the City of Vallejo during its community reuse planning process. The Navy action evaluated in the EIS/EIR is the disposal and conveyance of Federal surplus land to non-Federal entities and the no-action alternative. The local action evaluated in this EIS/EIR is the proposed community reuse of Federal surplus property at Mare Island.

The Medium Density Alternative and Open Space Alternative have reduced buildout densities compared to the Reuse Plan Alternative and therefore have somewhat reduced impacts while still providing job growth and housing opportunities. Neither the Medium Density Alternative nor the Open Space Alternative proposes a level of development that would necessitate a southern crossing. The need for a southern crossing bridge across Mare Island Strait was based on the intensity of development projected at buildout of the Reuse Plan Alternative.

Letter C

United States Department of the Interior

NATIONAL PARK SERVICE

Pacific West Field Area
600 Harrison Street, Suite 600
San Francisco, California 94107-1372

IN REPLY REFER TO:

L7619 (PGSO-RP)

OCT 26 1995

Commanding Officer
Engineering Field Activity West
Naval Facilities Engineering Command
Attn: Mr. Jerry Hemstock
900 Commodore Drive
San Bruno, CA 94066-5006

Dear Mr. Hemstock:

The National Park Service wishes to comment on the Draft Environmental Impact Statement/Environmental Impact Report (EIS/EIR) for the Mare Island Naval Shipyard Disposal and Reuse. Mare Island Naval Shipyard was designated a National Historic Landmark by the Secretary of the Interior in 1975. Mare Island's historical status therefore is equivalent to that of the Presidio of San Francisco, the Empire State Building, New Orleans' "French Quarter" and other well-known historic properties. Preservation of Mare Island's historic resources should be among the highest priorities in planning for disposal and reuse of the installation. The reuse alternatives presented in the draft EIS/EIR do not evidence great concern for preservation of the historic resources. C-1

The Cultural Resources section in Chapter 3 should define what a National Historic Landmark is and differentiate it from listing in the National Register of Historic Places. National Historic Landmark status is the highest honorary designation that may be conferred upon a historic property. National Historic Landmarks possess exceptional quality in illustrating or interpreting the heritage of the United States in history, architecture, archeology, engineering and culture. National Historic Landmarks are considered to have exceptional significance at the national level, whereas National Register properties may have local, State or national significance. C-2

While the draft document notes adverse impacts to individual historic resources by some of the planned new uses, it does not address impacts to the National Historic Landmark as a whole. The Navy and its consultants recently completed a survey and evaluation of Mare Island's historic and prehistoric resources which resulted in a National Register nomination form delineating a single large historic district with over 500 contributing resources. Although the larger historic district has not yet been determined eligible for the National Register, we believe that the documentation provides a justifiable boundary and an excellent description of Mare Island's resources and C-3

significance. Once the National Register document has been finalized, we intend to request that our Washington, D.C., headquarters consider it as revised documentation for the National Historic Landmark. The draft EIS/EIR and any other environmental or planning documents should stress the district's historical status and consider the effects of planned actions on individual structures and the district as a whole. C-3

The alternatives outlined in the Draft EIS/EIR state that Reuse Area 4 will be managed as a State or National Park. Given the current budget constraints upon both park systems, we believe that this is unrealistic and unlikely to occur. Evidence should be presented in the document that one or the other park system is willing to take on this responsibility, or a different management strategy should be presented. C-4 The draft document also states (on page 2-15) that retention of Mare Island's National Historic Landmark status is dependent upon maintaining the integrity of the historic resources in Reuse Area 4. The Landmark (as originally defined) consists of four historic areas, which include the shipyard industrial area and the historic housing; the Marine barracks; the Naval Hospital; and the Naval Ammunition Depot. Loss of historic integrity in any of these areas could lead to removal of Landmark designation. Further, as we stated above, we believe that the single, larger district merits consideration as the National Historic Landmark boundary. Therefore, preservation of the historic character of the district as a whole must be considered in any planning efforts. Loss of a large number of contributing resources, even if scattered throughout the district, could affect the integrity of the Landmark. C-5

The City of Vallejo's Reuse Plan calls for demolition of a number of buildings to create parking space and open space and to allow new development. The buildings to be demolished are only partially identified in the draft document and include a number of resources identified as contributing in the National Register documentation. C-6 Other development proposed in the Reuse Plan could damage or destroy historic archeological resources. The Draft EIR/EIS does not address the impacts of transportation improvements, such as street widenings and construction of new streets, sidewalks, bus pullouts, bike lanes, etc., on cultural resources. C-7 Historic tree plantings along main avenues, formal yards, and other designed landscape areas may be affected by widening streets and adding amenities. Wider, more formal streets, with traffic lights, sidewalks, etc., will change the existing character of the historic district as well. In addition, because new uses will be introduced over a period of several years, there is a likelihood that a large number of historic structures will sit vacant and unmaintained for several years until tenants are found. C-8 This situation should be addressed in the document, perhaps through preparation of a plan for monitoring and maintaining vacant structures.

These factors constitute a substantial threat to the integrity of the National Historic Landmark. C-9 At this time, a Memorandum of Agreement among the Navy, City of Vallejo, State Historic Preservation Officer, and Advisory Council on Historic Preservation has not been finalized. There is no assurance that the City will protect Mare Island's historic resources (outside Reuse Area 4) through a historic preservation ordinance. C-10 Nor does the Navy appear willing or able to mitigate the potential adverse effects of demolition or lack of maintenance through a comprehensive HABS/HAER recording program prior to transfer of the property to the City of Vallejo. There is a great risk of a large number of contributing resources within this National Historic Landmark

being lost to future demolition or deterioration, because there is insufficient assurance that the historic resources will be preserved through documentation prior to the transfer, or through planning channels after the transfer. The National Historic Landmark status of the Mare Island Naval Shipyard should guide the planning process to provide for the preservation and appropriate reuse of Mare Island's historic resources. C-10

Thank you for the opportunity to comment on this document. We hope that our historic preservation concerns will be addressed as planning for disposal and reuse of Mare Island proceeds.

Sincerely,

Patricia L. Neubacher

for Stanley T. Albright
Field Director, Pacific West Area

cc:
Ann Merideth, City of Vallejo, Planning Division, 555 Santa Clara Street, Vallejo, CA 94590-5934
Clarence Caesar, Office of Historic Preservation, P.O. Box 942896, Sacramento, CA 94596-0001
Ms. Lee Keatinge, Advisory Council on Historic Preservation, 730 Simms St., Suite 401, Golden, CO 80401

Response to Comments

Response to Comment C-1. The text in Section 3.4, Cultural Resources, has been revised to indicate that portions of the former Mare Island Naval Shipyard were designated as a National Historic Landmark (NHL) and a larger area was nominated to the National Register of Historic Places (NRHP) as a historic district. Section 3.4 has been revised to discuss the difference between the two designations, recognizing that the NHL is a very high honor, reserved for the most important historic properties.

With respect to the priority given to preservation of historic properties, Section 4.4 has been revised to include a discussion of the Memorandum of Agreement (MOA), agreed to by the Navy, State Historic Preservation Officer (SHPO), Advisory Council on Historic Preservation (ACHP), Vallejo, and the National Park Service (NPS). The MOA sets in place a series of steps that have been or will be taken to ensure that historic preservation is given a priority in the reuse of the base. Some of these steps will be taken by the Navy, some by Vallejo. The provisions of the MOA are outlined in Section 4.4 and the MOA and are included in Appendix D. This MOA also is discussed in responses to comments C-5 and C-6 below.

Response to Comment C-2. Section 3.4 has been revised to define the portions of the former Mare Island Naval Shipyard that were designated as a National Historic Landmark, the portions that were listed as an NHL, and the larger area that was nominated to the NRHP. As discussed in response to comment C-1 and in the text of Section 3.4, there are 2 levels of designation of historic properties at Mare Island—the NHL and the much larger NRHP historic district.

Response to Comment C-3. The text of Section 3.4 has been revised to address impacts to the NRHP historic district and to the NHL properties. The text has been revised to indicate that potential impacts may occur through changes to individual buildings, as well as through changes to the character of the historic district. The MOA, summarized in Section 4.4 and included in Appendix D, includes some provisions for design review of construction in the area of historic buildings, as well as design review for potential impacts to landscaped areas that are identified as contributing elements of the historic district.

The EIS/EIR provides a programmatic analysis of the impacts of the reuse alternatives. Section 4.4 has been revised to include more detailed analysis of the general types of impacts likely to occur through the disposal and reuse processes. Because of the general nature of the reuse plan, impacts to individual historic properties are not yet known. Impacts will be more specifically identified during the development of specific plans.

Response to Comment C-4. The text was revised to delete reference to adoption of Reuse Area 4 as a state or national park. This reuse area is only a part of the larger historic district but includes some of the better known historic properties. The MOA and its attachments indicate that structures in this reuse area will be subject to the city's historic preservation regulations when transferred out of Federal ownership. Vallejo's regulations require a review process for changes to historic resources. The National Park Service considered but rejected adoption of the larger NRHP historic district as the boundaries for the NHL.

Response to Comment C-5. As stated in response to Comment C-1, the distinction between the NHL and NRHP historic district is discussed in new text in Section 3.4. New text in Section 4.4 addresses the impacts of demolition, rehabilitation, layaway, construction, and other impacts to the historic district and the NHL. Revised Section 4.4 also addresses the manner in which those impacts would be mitigated through provisions of the MOA.

Response to Comment C-6. Since circulation of the Draft EIS/EIR, the Section 106 consultation has been completed and a MOA has been executed. The MOA provides measures that either avoid or

mitigate demolition of historic buildings, and other potentially significant impacts to historic properties. The MOA was signed by the Navy, ACHP, and the California SHPO. The National Park Service and the City of Vallejo also signed as concurring parties. With respect to archeological sites, Vallejo has agreed in the MOA to follow state law, specifically, the provisions of CEQA, in its treatment of archeological properties.

Response to Comment C-7. The EIS/EIR provides a program level of analysis commensurate with the level of detail presented in the reuse plan. The reuse plan does not identify the specific size or location of transportation improvements. More detailed plans will be developed following Vallejo's adoption of the reuse plan. These plans will provide more specific detail regarding the land use proposals.

In the MOA, Vallejo agrees to designate as local landmarks the historic landscape elements, identified as contributing parts of the NRHP historic district. This designation will assure local historic preservation review of any transportation project that might affect a designated historic landscape element.

Response to Comment C-8. The potential impacts of long-term layaway are addressed in new text in Section 4.4. The MOA establishes standards for the layaway and caretaker status of the historic buildings at Mare Island. These standards are designed to minimize adverse impacts to the buildings in the short run. As stated in Section 4.4, however, it is likely that buildings in the caretaker status would eventually begin to deteriorate, irrespective of the care taken in the layaway program. The layaway buildings ultimately would need to be either rehabilitated and reused or demolished. The MOA provides mitigation measures for both rehabilitation and demolition.

Response to Comment C-9. Section 4.4 has been revised to include the terms of the MOA as signed by NPS, ACHP, SHPO, the Navy, and Vallejo. In the MOA, as described in Section 4.4, historic landscape elements identified as contributing parts of the historic district will be subject to Vallejo's historic preservation guidelines. The designated properties will include buildings, structures, and landscape elements. These properties include all contributing elements within Reuse Area 4 and numerous buildings outside that reuse area. For the designated elements, Vallejo's Architectural Heritage and Landmarks Commission must review and approve any proposal for demolition. This local review would mitigate adverse effects by discouraging demolition with respect to the enumerated properties and for the historic district generally.

Response to Comment C-10. The MOA establishes a cooperative program between the Navy and NPS to record the historic buildings of Mare Island on a comprehensive basis, even those buildings not scheduled for demolition or other adverse effects. The specific provisions of the recordation program are summarized in Section 4.4 and are detailed in the MOA, which is reproduced in Appendix D.

United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
600 Harrison Street, Suite 515
San Francisco, California 94107-1376

October 20, 1995

Mr. Jerry Hemstock
Code 185JH
Engineering Field Activity, West
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, California 94066-5006

Dear Mr. Hemstock:

The Department of the Interior has reviewed the Draft Environmental Impact Statement/Environmental Impact Report (DEIS/EIR) for the Disposal and Reuse of Mare Island Naval Shipyard (MINSY).

The following comments are provided for your consideration when preparing the Final Environmental Impact Statement/Report.

GENERAL COMMENTS

The Fish and Wildlife Service (Service) provided initial comments on the Notice of Preparation of the DEIS/EIR in a letter dated October 20, 1994. As noted in that letter and in the DEIS/EIR, the Service has formally requested excess federal property in the military property disposal process (Page 1-10).

In light of the fact that Federal agency requests take precedence under law over State and local government requests, we find it inappropriate that this specific land use was not considered as the most reasonably foreseeable land use of the area requested (Fig. 1-4). D-1

The DEIS/EIR specifically states that "The activities required to accomplish the disposal action,... are assumed to be a part of each alternative...". The DEIS/EIR then sidesteps this issue by stating that the Service's request is "currently under consideration by the Navy." (Page 1-12).

The DEIS/EIR states that "Under the 1994 Defense Authorization Act, DOD and federal screening should be completed within six months after the installation's closure date is approved."

Considering this time frame, why are the Fish and Wildlife Service and U.S. Immigration and Naturalization Service requests still under consideration by the Navy? D-1

The DEIS/EIR Final Closure Decision tree clearly depicts that the federal screening decision was to have occurred seven steps prior to the completion of the DEIS/EIR, yet no conclusion or decision is documented. Further, this most likely land use should be addressed in further detail as a part of the preferred alternative (Page 2-26). D-2

Positive biological impacts related to the proposed San Pablo Bay National Wildlife Refuge expansion should be analyzed for each alternative. This would include improved management for salt marsh harvest mice, shorebirds, waterfowl and native plants. D-3

The socio-economic impacts associated with the Service's use, public use programs, and ecotourism should be identified and addressed. As an example, resent studies indicate each ecotourist visit to an active refuge is estimated to be worth between $21 and $145 to the local community. D-4

Given the large number of visits projected each year, this positive economic impact should be addressed. Both the economic and regional benefits should be analyzed.

The DEIS/EIR does not adequately address impacts to non-sensitive fish and wildlife species resulting from the proposed reuse plan. Specifically, the DEIS/EIR makes no mention of impacts to important commercial fisheries such as dungeness crab (*Cancer magister*) and other non-sensitive fisheries that could be affected during construction of the southern crossing over Mare Island Strait. D-5

Sensitive Species

The U.S. Navy initiated Section 7 formal consultation for the proposed disposal and reuse of MINSY with submittal of the DEIS/EIR in September 1995.

The biological opinion which results from this consultation will identify measures necessary to avoid or minimize adverse effects on listed and proposed species by future actions. D-6

The biological opinion may also serve as a model for any section 10(a) permit, as defined in the Endangered Species Act of 1973, as amended, in the event that any land becomes owned by the State of California, local government, or private individual with disposal.

We are concerned about language in the DEIS/EIR as it relates to the Service's ability to stipulate certain requirements within the formal consultation for the Navy on listed and proposed species issues associated with the disposal and reuse of this military facility. D-7

These requirements relate to the following: (1) transmittal of information concerning habitat requirements of listed species and consultation obligations and (2) measures for avoiding and minimizing effects of future actions on listed species.

The DEIS/EIR is somewhat ambiguous about the Navy's obligation to transfer lands as demonstrated on page 1-10 which states "(1)anguage *appears* in the conveyance legislation that these lands would revert to the state when no longer needed for United States military purposes" (emphasis added). D-8

We have requested the U.S. Department of the Interior Regional Solicitor's Office to review the statute establishing MINSY to determine how it may affect the Service's final determination within the Section 7 consultation. D-9

The Service continues to review the DEIS/EIR to address potential impacts to listed and proposed species and their habitat. We concur with the Navy's determination that the proposed disposal and reuse of MINSY is not likely to adversely affect the California brown pelican (*Pelecanus occidentalis californicus*), American peregrine falcon (*Falco peregrinus anatum*), coastal population of the western snowy plover (*Charadrius alexandrinus nivosus*), and California freshwater shrimp (*Syncaris pacifica*). D-10

However, at this time, we do not concur with the Navy's determination that the proposed project is not likely to adversely affect the California clapper rail (*Rallus longirostris obsoletus*).

The DEIS/EIR recommends the need for authorization of incidental take with future actions for the Sacramento splittail (*Pogonichtys macrolepidotus*) and delta smelt (*Hypomesus transpacificaus*). However, the DEIS/EIR does not provide adequate information for determining the potential of identified actions to adversely affect these species. D-11

Actions identified in the DEIS include: (1) dry dock use, (2) in-water work which mobilizes sediments, (3) actions which affect freshwater flowing into the area, and (4) actions which cause contaminants to move into the water. In addition, the DEIS/EIR does not provide adequate information to determine presence or absence of these species in the project area.

The DEIS/EIR does describe potential impacts to the salt marsh harvest mouse (*Reithrodontomys raviventris*) and California clapper rail from various alternatives for disposal and reuse of MINSY (pages 4-51 - 4-64). D-12

Within the context of the Section 7 consultation, we are reviewing these potential impacts and proposed mitigation measures. The Service's final determination on these impacts and mitigation measures will be addressed with the conclusion of the Section 7 consultation. D-13

SPECIFIC COMMENTS

Page ES-15, **Biological Resources.** The last portion of this paragraph infers that removal of backup electrical line could have a secondary impact on fire-fighting ability if the primary line fails. D-14

This section needs to be changed to reflect information stated on page 3-173. This page includes a list of dedicated emergency generators available for all vital functions including fire protection systems.

Page 1-10, **DOD Screening and Federal Agency Screening.** An explanation should be given as to why the screening process, described on pages 1-10 to 12, was not followed. The DEIS/EIR states that "The first step in the real estate screening process is to offer property to other DOD agencies and instrumentalities; after which the property is then offered to other federal agencies." D-15

Next in the screening process is Homeless Assistance Screening and finally state and local screening. According to this procedure, should not the Fish and Wildlife Service's request receive priority above local screening?

The description of the Service's request should clarify it as being 315 acres of tidal Wetlands, 187 acres of non-tidal Wetlands, dredge ponds number 1, 3E, 3W, and building 505. D-16

Page 2-26, **Wetlands and Dredge Disposal Areas.** Paragraph 1 says "the levees of the dredge ponds will be raised by four feet..." Are all levees on all ponds to be raised or just a selected number of ponds? D-17

What would the final width of the pond levees be? If a selected number of ponds is to be raised, which ponds are they? Would raising the levees affect reuse of the state reversion land after ponds are filled or no longer needed? D-18

Is such an alteration to the levees to be accomplished by the City of Vallejo and if so, what permits and agreements will be required? Is such a continued use reasonably foreseeable, given the permit process, environmental constraints, and economic investment? If so, when? What are the direct and indirect environmental impacts? D-19 D-20

Paragraph 2 leads the reader to believe that dredge disposal ponds 1, 3E, 3W and building 505 are all within the state reversion area when in fact the majority of pond 3E, some non-tidal Wetlands and all of building 505 will remain Navy property available for transfer. D-21

Page 2-37, **Wetlands and Dredge Disposal Areas.** The DEIS/EIR states that the request by the Service for transfer of tidal and non-tidal Wetlands and three dredge material ponds would be considered under this alternative. D-22

Please clarify why the Service request is being considered differently under each alternative, as opposed to all other Federal agency requests?

Page 2-41, **Open Space Alternative.** The DEIS/EIR states that dredge ponds would revert to open space. As with the Medium Density Alternative, the Service's request for land transfer should be considered under this alternative. D-23

The Service's mission to preserve and enhance wetland habitat for wildlife and provide opportunities for public wildlife-oriented recreation would be compatible with the Open Space Alternative.

Page 3-18, **Figure 3-6.** The figure shows the land adjoining San Pablo Bay NWR as "low density residential" when in fact it is a unit of the San Pablo Bay NWR. D-24

Page 3-49, **Table 3-14.** Description of CA-SOL-385H should be revised to state, " Western portion of the Civil War defensive earthwork constructed in 1864...". D-25

Page 3-81, **Table 3-15.** The Federal status of the winter-run chinook salmon is endangered. D-26

Page 3-173, **Alternate Power.** This section should be revised to reflect the terms of the Grant of Easement for the power line and Right-of Way. This Easement states that: D-27

"The rights and interest granted herein shall terminate upon non-use or abandonment by the Government for the purpose for which said easement is granted namely for the purpose of providing an alternate 115 kilovolt electric transmission

line to Mare Island Naval Shipyard Facilities, and that in the event of such abandonment or non-use by the Government, said Government shall furnish to the Grantors, a Quitclaim Deed to said easement." D-27

The alternate power section should discuss the methods and impacts of removing the transmission line and the timeline for filing the Quitclaim Deed. D-28

Page 4-53, **Fish and Wildlife Resources.** The Cullinan Ranch property was acquired by the Service in 1991. D-29

Page 4-54, **Wetlands.** This paragraph should be revised to include a sentence stating that any project proposing to impact greater than 10 acres of wetland will require an individual permit from the Army Corps of Engineers. D-30

Page 4-60, **Mitigation 9.** This paragraph should additionally state that, "Wetlands impacts affecting less than one acre would require consultation with the U.S. Army Corps of Engineers if the requirements for a Nationwide Permit are not met." D-31

Page 4-61, **Impacts to Sensitive Fish and Wildlife.** The DEIS/EIR states, on page 2-37, that the Service's request for transfer of tidal and non-tidal land will be considered under this alternative. If land were transferred to the Service, Impacts 3, 4, and 5 would be reduced or non-existent and mitigation may not be needed. D-32

Page 4-64, **No Action Alternative.** The DEIS/EIR should state that the Navy would finalize the MOU for the Refuge Overlay and that the Service's request for transfer of tidal and non-tidal land will be considered under this alternative. D-33

Page 4-67, **Paragraph 4.** The last sentence should read "salt marsh harvest mouse". D-34

Page 4-69, **Item #5.** The DEIS/EIR states that, "Because these disposal ponds are on state reversionary land, SLC would be the property owner. Any transfer of state reversionary land to the USFWS would be a state decision." D-35

This should be clarified to explain that the City of Vallejo's request for the dredge pond should also be a state decision and the lease of property to the appropriate land management agency should be a state decision.

Historic and Cultural Resources

Mare Island Naval Shipyard was designated a National Historic Landmark by the Secretary of the Interior in 1975. Mare Island's D-36

that this is unrealistic and unlikely to occur. Evidence should be presented in the document that one or the other park system is willing to take on this responsibility, or a different management strategy should be presented and discussed. D-39

The draft document also states (on page 2-15) that retention of Mare Island's National Historic Landmark status is dependent upon maintaining the integrity of the historic resources in Reuse Area 4. The Landmark (as originally defined) consists of four historic areas, which include the shipyard industrial area and the historic housing; the Marine barracks; the Naval Hospital; and the Naval Ammunition Depot. D-40

Loss of historic integrity in any of these areas could lead to removal of Landmark designation. Further, as stated above, we believe that the single, larger district merits consideration as the National Historic Landmark boundary. Therefore, preservation of the historic character of the district as a whole must be considered in any planning efforts. D-41

Loss of a large number of contributing resources, even if scattered throughout the district, could affect the integrity of the Landmark.

The City of Vallejo's Reuse Plan calls for demolition of a number of buildings to create parking space, open space, and for new development. The buildings to be demolished are only partially identified in the draft document and include a number of resources identified as contributing in the National Register documentation. D-42

Other development proposed in the Reuse Plan could damage or destroy historic archeological resources. The Draft EIR/EIS does not address the impacts of transportation improvements, such as street widenings and construction of new streets, sidewalks, bus pullouts, bike lanes, etc., on cultural resources.

Historic tree plantings along main avenues, formal yards, and other designed landscape areas may be affected by widening streets and adding amenities. Wider, more formal streets, with traffic lights, sidewalks, etc., will change the existing character of the historic district as well. D-43

In addition, because new uses will be introduced over a period of several years, there is a likelihood that a large number of historic structures will sit vacant and unmaintained for several years until tenants are found. This situation should be addressed in the document, perhaps through preparation of a plan for monitoring and maintaining vacant structures.

These factors constitute a substantial threat to the integrity of the National Historic Landmark. At this time, a Memorandum of D-44

historical status therefore is equivalent to that of the Presidio of San Francisco, the Empire State Building, New Orleans' "French Quarter" and other well-known historic properties.

Preservation of Mare Island's historic resources should be among the highest priorities in planning for disposal and reuse of this installation. D-36

The reuse alternatives presented in the draft EIS/EIR do not evidence sufficient concern for preservation of these historic resources.

The Cultural Resources section in Chapter 3 should define what a National Historic Landmark is and differentiate it from listing on the National Register of Historic Places. National Historic Landmark status is the highest honorary designation that may be conferred upon a historic property.

National Historic Landmarks possess exceptional quality in illustrating or interpreting the heritage of the United States in history, architecture, archeology, engineering and culture. National Historic Landmarks are considered to have exceptional significance at the national level, whereas National Register properties may have local, State or national significance. D-37

While the draft document notes adverse impacts to individual historic resources by some of the planned new uses, it does not address impacts to the National Historic Landmark as a whole.

The Navy and its consultants recently completed a survey and evaluation of Mare Island's historic and prehistoric resources which resulted in a National Register nomination form delineating a single large historic district with over 500 contributing resources.

Although the larger historic district has not yet been determined eligible for the National Register, we believe that the documentation provides a justifiable boundary and an excellent description of Mare Island's resources and significance. D-38

Once the National Register document has been finalized, we intend to request that our Washington, D.C., headquarters consider it as revised documentation for the National Historic Landmark.

The draft EIS/EIR and any other environmental or planning documents should stress the district's historical status and consider the effects of planned actions on individual structures and the district as a whole.

The alternatives outlined in the Draft EIS/EIR state that Reuse Area 4 will be managed as a State or National Park. Given the current budget constraints upon both park systems, we believe D-39

Agreement among the Navy, City of Vallejo, State Historic Preservation Officer, and Advisory Council on Historic Preservation has not been finalized.

There is no assurance that the City will protect Mare Island's historic resources (outside Reuse Area 4) through a historic preservation ordinance. Nor does the Navy appear willing or able to mitigate the potential adverse effects of demolition or lack of maintenance through a comprehensive HABS/HAER recording program prior to transfer of the property to the City of Vallejo. D-44

There is a great risk of a large number of contributing resources within this National Historic Landmark being lost to future demolition or deterioration, because there is insufficient assurance that the historic resources will be preserved through documentation prior to the transfer, or through planning channels after the transfer.

The National Historic Landmark status of the Mare Island Naval Shipyard should guide the planning process to provide for preservation and appropriate reuse of Mare Island's historic resources.

We appreciate the opportunity to comment on this document.

Sincerely,

Patricia Sanderson Port
Regional Environmental Officer

Enclosure

cc: Director, OEPC, with original incoming
Regional Director, Region I, FWS
Field Director, Pacific West Area, NPS

Response to Comments

Response to Comment D-1. Although the USFWS indicated an interest in property and facilities at Mare Island in October 1994, it did not submit a formal request for property transfer until April 1997. The USFWS's original indication of interest included a large area of state reversionary land at Mare Island that was not available for transfer to other Federal agencies. However, the USFWS may enter into an agreement with the State Lands Commission for lease of Pond 3W, Pond 1, and the state's portion of Pond 3E. The Immigration and Naturalization Service has withdrawn its request for transfer of certain Mare Island property.

Response to Comment D-2. Because the proposed action analyzed in this document is disposal and reuse of Navy surplus land, the subsequent uses of the excess lands being transferred to other Federal agencies are not addressed as part of the project alternatives. These subsequent uses are considered part of cumulative development and therefore are addressed in Section 5.5, Cumulative Impacts.

Response to Comment D-3. As noted in the response to Comment D-2, excess lands subject to transfer to other Federal agencies, including the portion being transferred to the USFWS for the San Pablo Bay National Wildlife Refuge expansion, are not addressed as part of impacts of implementation of the reuse alternatives. A discussion of this beneficial impact has been added to the cumulative biological impacts analysis in Section 5.5, Cumulative Impacts.

Response to Comment D-4. As part of the cumulative analysis, text has been added under the subheading *Recreation* in Section 5.5, Cumulative Impacts, to describe the potential beneficial effects of an expanded wildlife refuge and visitors center to the City of Vallejo. However, as noted under the significance criteria used to evaluate specific issues, such as recreation, changes in annual operating budgets, and cash flows to the city or the special districts involved, are not considered to be environmental impacts and are therefore not discussed in this EIS/EIR.

Response to Comment D-5. The analysis of biological resources contained in the EIS/EIR focused on native and sensitive species and sensitive habitat, since these classifications are legally protected by the Federal and state governments. Although dungeness crab and other non-sensitive fishes are not specifically identified in the impacts discussion, impacts from in-water activities identified for sensitive species could also apply to non-sensitive species as well.

Because the location for a southern crossing has not yet been determined, and a specific design has not been developed, identifying impacts to commercial fisheries from its construction would be speculative. Conservation easements will also be established to protect sensitive biological resources. Construction of a southern crossing would require a full environmental analysis by the developing entity, at which time impacts to these industries could be more accurately determined.

Response to Comment D-6. The Section 7 consultation has been completed and a USFWS biological opinion has been prepared that identifies measures necessary to avoid or minimize adverse effects on listed and proposed species by future actions. The biological opinion is included in Appendix F.

Response to Comments D-7, D-8, and D-9. The Navy has determined that it cannot place restrictions on future use of property designated to revert to the State of California. During the Endangered Species Act, Section 7 consultation process, the USFWS reviewed the Navy's determination that the Navy had no authority to place restrictive conditions on state reversionary property. The USFWS Biological

Opinion subsequently addressed only surplus property that will be transferred from Federal ownership. The Navy will advise the state of the presence of endangered species and wetlands on state reversionary property at the time of reversion.

Response to Comments D-10, D-11, D-12, and D-13. Compliance with Federal and state regulations affecting biological resources on Mare Island has resulted in the preparation of a USFWS biological opinion, which was issued following the Section 7 consultation process under the Federal Endangered Species Act, 16 U.S.C. §1531. EIS/EIR Section 4.6, Biological Resources, has been revised to include results of the Endangered Species Act, Section 7 consultation, and the USFWS Biological Opinion. The biological opinion is included in Appendix F and consists of detailed agreements between the Navy and the USFWS regarding protection of endangered and threatened species at Mare Island. Following disposal of Federal surplus property at Mare Island, Vallejo will implement these requirements. As part of the agreement, habitat for the California clapper rail and the salt marsh harvest mouse on surplus property will be protected under conservation easements. As part of each reuse alternative for Mare Island, Vallejo and the Navy will implement the following measures for endangered and threatened species protection and management.

The Navy will ensure that a detailed, active, annual, predator management plan for all portions of the former Mare Island Naval Shipyard is developed and implemented during caretaker status. The plan will not exceed 20 hours per week of field effort and will be implemented within 6 months after a ROD on the EIS/EIR. The Navy will also develop a detailed plan which effectively manages public access in and adjacent to clapper rail and salt marsh harvest mouse habitat. Upon conveyance of Federal surplus property at Mare Island, Vallejo then will be responsible for implementing a similar active predator management program, not to exceed 20 hours per week, and a human access management program. In addition, Vallejo will establish covenants, conditions, and restrictions (CC&Rs) to limit the number of cats and dogs allowed in each residential unit on Mare Island and will prohibit unleashed dogs and cats outside property lines of individual units. These restrictions will be enforced through the CC&R enforcement process or through the Vallejo Municipal Code.

The Navy and Vallejo will protect the delta smelt and Sacramento splittail during caretaker status and subsequent community reuse, respectively. Prior to transferring or leasing the dry docks or any other area where in-water activities may adversely affect delta smelt or Sacramento splittail, the Navy will inform the future owner or user that Federally listed endangered or threatened fish species occasionally occur in the vicinity of the former Mare Island Naval Shipyard. These fish species may enter dry docks during flooding and dewatering activities. Such future users may need to obtain an Endangered Species Act incidental take permits from USFWS, National Marine Fisheries Service (NMFS), and CDFG (USFWS 1997). A summary of measures that may be included in an incidental take permit have been added (see also response to comment F-1).

A small amount of Mare Island open space areas providing endangered species habitat is surplus Federal land, while a larger amount of the habitat area is state reversionary land or land subject to transfer to the USFWS (Figure 3-14). The surplus land, which accounts for approximately 10 percent of the on-island habitat for the salt marsh harvest mouse and California clapper rail, will become available for conveyance to Vallejo and therefore potentially vulnerable to adverse impacts through reuse activities. As described in Chapter 2, during the disposal process, the Navy will place conservation easements on endangered species habitat of the California clapper rail and the salt marsh harvest mouse located on surplus land (Figure 1-5). These easements are consistent in all of the reuse alternatives described in this EIS/EIR. The easements will ensure preservation of these lands for the protection of these endangered species and their habitat, regardless of any future changes in land ownership. The Navy is precluded from establishing similar restrictive easements on land reverting to the State of California. For the area of Mare Island that will revert to the state, consultation between the state and Federal agencies will occur regarding protection of biological resources.

Response to Comment D-14. The referenced power line has been removed, and text regarding potential impacts of removing the line are therefore deleted.

Response to Comment D-15. As discussed in the response to comment D-1, the Navy has completed the screening process, and land subject to transfer to the USFWS, USCG, USFS, and US Army have been identified. Because the proposed action analyzed in this document is disposal and reuse of Navy surplus land, the subsequent uses of the excess lands being transferred to other Federal agencies are not analyzed as part of the project alternatives. These subsequent uses are considered part of cumulative development and therefore are addressed in Section 5.5, Cumulative Impacts.

Response to Comment D-16. The referenced text has been revised to more accurately describe the land and facilities formally requested by the USFWS.

Response to Comment D-17. The levees of 9 of the ponds were to be raised to increase capacity. Engineering studies performed for the Navy suggested that the levees could be raised 10 feet above their 1987 elevations. The levee improvement project for the 9 ponds was to be completed over a period of 18 years. The levees were to be raised in 5-foot lift increments, each lift at each pond requiring about 1 year to complete. All except Ponds 1, 3W, 3E, and part of 2S have completed one 5-foot lift. The Navy has discontinued the levee improvement project for the dredge ponds. Raising the levees could be continued by others through consultation with the State of California, which will control most of the dredge ponds following reversion of this land to the state. Vallejo is conducting a feasibility study examining future use of the dredge ponds. The LTMS study is also underway and will evaluate dredge disposal options in the greater San Francisco Bay Area.

Response to Comment D-18. Under the Navy's levee improvement program, levee height was raised using dried and conditioned dredge material disposed of in the ponds. Levee height was increased by adding to the inboard side of the levee. Inboard slopes were maintained at approximately 2.5:1, and up to 6:1 on the outboard side. Thus, adding 4 feet to the height would increase the base of the levee by up to 33 feet.

The reversion boundary does not depend on the current elevation of the land. Most of the dredge pond area would continue to be under the jurisdiction of the State of California following reversion to the state. Future use of the land could be affected by raising the levees. It has not been determined that the levees would be filled and no longer needed. As a dredge material reuse facility, the material inside the levees might be continuously processed and shipped off-site to make room for more material.

Response to Comment D-19. Future increases in the height of the levees could be performed by Vallejo or by a contractor or operator of a future dredge material handling facility. One of the principal concerns would be that the ponds are maintained so that they would not adversely impact habitat of endangered or threatened species, which is governed by a memorandum of understanding between the USFWS and the Navy. Operation of a dredge material handling facility would be regulated by the San Francisco Bay Regional Water Quality Control Board, which requires permits for discharges to waters of the state and regulates water quality aspects of landfills and the storage and disposal of designated and hazardous waste.

Continued use of some of the dredge ponds as a regional dredge material handling facility may occur because of the demand for such facilities in the Bay Area. How soon such a facility could begin operation cannot be realistically predicted but may be addressed in the LTMS. The remaining dredge ponds are being transferred to the USFWS, which would have jurisdiction over uses of these ponds.

Response to Comment D-20. Impacts resulting from use of Federal agency transfer lands and state reversionary lands are discussed in Section 5.5, Cumulative Impacts. Most of the dredge ponds are in these 2 land categories and impacts from reuse of dredge ponds are discussed in Section 5.5.

Response to Comment D-21. The commenter is correct that Building 505 and a portion of Pond 3E are nonreversionary property. As discussed in responses to comments D-1 and D-2 above, the Navy has completed the screening process, and the referenced property is being transferred from the Navy to USFWS.

Response to Comment D-22. Since circulation of the Draft EIS/EIR, the document has been revised to provide discussion of excess lands subject to transfer to other Federal agencies, including land that would be transferred to the USFWS, in Section 5.5, Cumulative Impacts. See also response to comment D-2.

Response to Comment D-23. As discussed in response to Comments D-2 and D-3, land subject to transfer to the USFWS has been identified. Use of this property will allow the USFWS to enhance the wetland habitat for wildlife and to provide opportunities for public wildlife-oriented recreation. Because the proposed action analyzed in this document is disposal and reuse of Navy surplus land, the subsequent uses of excess lands subject to transfer to other Federal agencies are not analyzed as part of the project alternatives, including the Open Space Alternative and the Medium Density Alternative. However, these subsequent uses are considered part of cumulative development and are addressed in Section 5.5, Cumulative Impacts.

Response to Comment D-24. This figure indicates the land use designations contained in Vallejo's general plan. According to the general plan, the Cullinan Ranch area is designated low density residential. This designation could be changed through the general plan amendment process.

Response to Comment D-25. EIS/EIR Table 3-14, the description of CA-SOL-385H, has been revised to state:

> "Western portion of the Civil War defensive earthwork, constructed in 1864"

Response to Comment D-26. Table 3-15 has been revised to note that the status of the winter-run Chinook salmon is endangered.

Response to Comment D-27. The PG&E tower has been removed, and the comment is no longer applicable.

Response to Comment D-28. As discussed in the response to comment D-27, the PG&E tower has been removed, and the comment is no longer applicable.

Response to Comment D-29. Comment is noted. The text in this section has been updated and the reference to Cullinan Ranch is no longer included.

Response to Comment D-30. Because the COE determines which type of authorization is appropriate (see comment E-3), the specifics about the type of permit required, based on acreage, has been deleted. In addition, the third and fourth paragraphs under Wetlands Regulations in Section 3.6.5, which discuss the COE, have been substantially revised.

Response to Comment D-31. As discussed in the response to comment D-30, the COE determines which type of authorization is appropriate (see comment E-3). Therefore, the specific discussion about the type of permit required, based on acreage, has been deleted.

Response to Comment D-32. As discussed in the responses to comments D-2 and D-3, the Navy has completed the screening process, and the land and facilities subject to transfer to the USFWS have been identified. Use of this property will allow the USFWS to enhance the wetland habitat for wildlife and to provide opportunities for public wildlife-oriented recreation. Because the action analyzed in this document is the disposal and reuse of Navy surplus land, the subsequent uses of the excess lands being transferred to other Federal agencies are not addressed as part of the project alternatives. However, these subsequent uses are considered part of cumulative development and are addressed in Section 5.5, Cumulative Impacts.

Response to Comment D-33. As discussed in the responses to comments D-1 and D-3, the Navy has completed the screening process, and the land and facilities requested by USFWS have been identified. All Federal agency transfers, as well as reversion of land to the State of California, are assumed to occur under the No Action Alternative.

Response to Comment D-34. The referenced text has been revised, and the referenced sentence is no longer included in the section.

Response to Comment D-35. As noted in responses to comments D-1, D-2, D-3, and D-32, impacts to state reversionary land are now discussed in Section 5.5, Cumulative Impacts. The revised text clarifies the relation between state ownership and potential uses by other entities, including Vallejo.

Response to Comment D-36. Section 3.4 has been revised to define the portions of the former Mare Island Naval Shipyard that were designated as a National Historic Landmark and the larger area that was listed in the NRHP. As discussed in responses to letter "C" and in the text of Section 3.4, there are 2 levels of designation of historic properties at Mare Island—the NHL and the much larger NRHP historic district.

The principal means of avoiding or mitigating demolition of historic buildings and other potentially significant impacts to historic properties is the MOA. Section 4.4 has been revised to include the terms of the MOA, as signed by NPS, ACHP, SHPO, the Navy, and Vallejo. The MOA, included in Appendix D, contains provisions for design review of construction in the area of historic buildings, as well as design review for potential impacts to landscaped areas that are identified as contributing elements of the historic district.

Response to Comment D-37. Section 3.4 has been revised to differentiate between the National Historic Landmark and the National Register of Historic Places historic district. The text recognizes that NHL status is the highest honorary designation that can be bestowed on a historic resource.

Response to Comment D-38. Section 4.4 has been revised to address impacts to individual structures, as well as to the National Historic Landmark as a whole. Because the EIS/EIR is a programmatic document, Section 4.4 analyzes the general types of impacts likely to occur. Impacts to individual properties and the historic area as a whole will be more specifically identified during the development of specific plans. The MOA, summarized in Section 4.4 and included in Appendix D, contains provisions for design review of construction near historic properties and landscaped areas identified as contributing elements. The MOA, including its attachments, also contains a provision that this area will be adopted as a historic district and will be governed by Vallejo historic preservation ordinances.

Response to Comment D-39. The document has been revised to delete reference to adoption of Reuse Area 4, which contains some of the better known historic properties, as a state or national park.

Response to Comment D-40. Section 3.4 has been revised with new text to describe the distinction between the National Historic Landmark and National Register of Historic Places historic district.

Section 4.4 has been revised to address impacts to the NHL and the historic district. The MOA, as described in Section 4.4, contains provisions to ensure that historic preservation is given a high priority in reuse of the base.

Response to Comment D-41. Section 4.4 has been revised to reflect new analysis of impacts to historic resources, including individual structures and the landmark and district as a whole. The MOA, included in Appendix D, lays out the steps to be taken to ensure that historic preservation is given priority in reuse of the base.

Response to Comment D-42. Buildings to be demolished have been identified where known. The EIS/EIR is a programmatic document detailing the types of uses that will likely occur under reuse. No specific reuse plans exist for most of the base. The MOA was developed as a means to avoid or mitigate demolition of historic buildings and other potentially significant structures. By signing the MOA, the Navy, National Park Service, SHPO, ACHP, and Vallejo agreed that the Navy has offered the ACHP an opportunity to comment on the effects of disposal on historic resources.

Response to Comment D-43. The EIS/EIR provides a level of analysis commensurate with the level of detail in the reuse plan. Detailed information on the size and location of transportation improvements was not included in the reuse plan. Specific plans, including this information, will be developed by Vallejo upon adoption of the reuse plan. In the MOA, as described in Section 4.4, Vallejo agreed to designate 9 of the 12 historic landscape elements identified as contributing parts of the historic district as local landmarks. This designation will ensure a local historic preservation review of any transportation project that might affect the designated elements.

Text on the potential effect on historic resources from long-term layaway has been added to Section 4.4. The MOA contains standards designed to minimize the effects from layaway and caretaker activities on historic buildings at Mare Island. However, buildings in caretaker status would eventually deteriorate and would need to be rehabilitated and reused or demolished. The MOA provides mitigations for rehabilitation and demolition.

Response to Comment D-44. The MOA has been signed, and Section 4.4 has been revised to reflect the provisions detailed in the MOA. Vallejo has agreed to designate approximately 200 structures under its historic preservation ordinance and has designated approximately half of the contributing elements as local landmarks. Under these designations, the city's Architectural Heritage and Landmarks Commission must review and approve any proposed demolition. The local review would mitigate adverse effects by discouraging demolition of designated elements. The MOA also establishes a cooperative agreement between the Navy and National Park Service to record the historic buildings on Mare Island on a comprehensive basis. The specific details of the recordation are summarized in Section 4.4.

DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, CORPS OF ENGINEERS
211 MAIN STREET
SAN FRANCISCO, CALIFORNIA 94105-1905

REPLY TO
ATTENTION OF

CESPN-CO-R

04 DEC 1995

MEMORANDUM FOR Commander Officer, Engineering Field Activity West, Naval Facilities Engineering Command, Attn: Mr. Jerry Hemstock (Code 18522), 900 Commodore Drive, San Bruno, California 94066-5006

SUBJECT: File Number 21646N24

1. This is in reference to the Mare Island Naval Shipyard Disposal and Reuse Draft Environmental Impact Statement / Environmental Impact Report dated August 1995. The document contains several misunderstandings about Department of the Army permits for activities requiring authorization pursuant to Section 404 of the Clean Water Act (33 U.S.C. 1344). E-1

2. Page 3-93, last paragraph, contains several errors. Projects involving discharges of dredged or fill material to waters of the United States, including wetlands, must be authorized, not only reviewed, by the Corps of Engineers. Wetland fills of any amount require Corps of Engineers authorization. Authorization of fills less than one acre is not automatically granted. The writer of this paragraph may be alluding to the provisions of Nationwide Permit 26, which may be used to authorize wetland fills up to 10 acres in size in areas that qualify as "headwaters" or "isolated waters", but use of this nationwide permit may not be applicable to wetland fills on Mare Island. E-2

3. Page 4-54, last paragraph, repeats several errors found on page 3-93. To reiterate, authorization from the Corps of Engineers pursuant to Section 404 of the Clean Water Act is required for wetland fills of any size. Authorization may be by general or individual permit, but the Corps determines which type of authorization is appropriate. E-3

4. In general, all proposed excavation or discharges of dredged or fill material into waters of the United States must be authorized by the Corps of Engineers pursuant to Section 404 of the Clean Water Act (CWA) (33 U.S.C. 1344). Waters of the United States generally include tidal waters, lakes, ponds, rivers, streams (including intermittent streams), and wetlands. E-4

CESPN-CO-R
SUBJECT: File Number 21646N24

5. The Corps of Engineers also has regulatory authority pursuant to Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403). All proposed work and/or structures extending bayward or seaward of the line on shore reached by: (1) mean high water (MHW) in tidal waters, or (2) ordinary high water in non-tidal waters designated as navigable waters of the United States, must be authorized by the Corps of Engineers pursuant to Section 10 of the Rivers and Harbors Act of 1899. Additionally, all work and structures proposed in unfilled portions of the interior of diked areas below former MHW must be authorized under Section 10 of the same statute.

E-5

6. If you have any questions, please call Jane Hicks of our Regulatory Branch at telephone 415-744-3318 Ext. 238. If you wish to write, please address all correspondence to the District Engineer, Attention: Regulatory Branch, and refer to the file number at the head of this letter.

CALVIN C. FONG
Chief, Regulatory Branch

CF:

A. Merideth, City of Vallejo

Response to Comments

Response to Comment E-1. The discussion of regulation of wetlands by the COE has been substantially revised, in accordance with the comment letter, as demonstrated in the responses to comments E-2 through E-5.

Response to Comment E-2. The referenced paragraph in EIS/EIR Section 3.6.5 has been corrected to read as follows:

> "The COE regulates impacts to wetlands and other waters under Section 404 of the Clean Water Act (CWA), 33 U.S.C. §1251. Projects that involve excavating dredged or fill material into waters of the US, including wetlands, must be reviewed and authorized by the COE and reviewed by the US Environmental Protection Agency. The COE also regulates work extending bayward of the mean high water line under Section 10 of the Rivers and Harbors Act of 1899. COE permits are required for projects that could affect wetlands and the shoreline of Mare Island regardless of whether these impacts occur on state reversionary land, on land transferred to a Federal agency, or on surplus land."

Construction of the southern crossing bridge across Mare Island Strait would also require consultation with the COE. The level of consultation would be contingent upon the ultimate location of the bridge. Should the bridge be located in Reuse Area 10, its construction could impact conservation easements containing wetlands, but if it were located in Reuse Area 5, impacts to biological resources would be substantially less. In either case, the bridge would fall within the Section 404 jurisdiction of the COE and would require appropriate consultation and coordination.

Response to Comment E-3. The specifics about the type of permit required, based on acreage, has been deleted. The remaining text discussing wetlands permitting has been corrected.

Response to Comment E-4. As noted in the response to comment E-1, Section 3.6.5 has been revised to reflect the comment and acknowledge that all proposed excavation or discharge into waters of the US must be authorized by the COE.

Response to Comment E-5. A discussion of Section 10 of the Rivers and Harbors Act of 1899 has been added to the referenced text. The discussion notes that the US Army Corps of Engineers has regulatory authority pursuant to Section 10 of the River and Harbors Act.

Letter F

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802-4213
TEL (310) 980-4000; FAX (310) 980-4018

March 29, 1996

Mr. Jerry Hemstock
U.S. Department of the Navy
Engineering Field Activity, West
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, California 94066-5006

Dear Mr. Hemstock:

Thank you for the opportunity to review the Draft Environmental Impact Statement/Environmental Impact Report for Mare Island Naval Shipyard Disposal and Reuse (EIS/EIR), and for requesting our concurrence with the Biological Assessment for purposes of completing federal Endangered Species Act, section 7 consultation.

The National Marine Fisheries Service (NMFS) is responsible for preserving and enhancing marine, estuarine, and anadromous fishery resources and the habitats which support these resources. The EIS/EIR's proposed reuse alternatives include continued operation of shipyard dry dock facilities and associated dredging activities that are of particular interest to NMFS. The EIS/EIR describes dry dock operations that can trap fish (not returned to Mare Island Strait during dewatering) and subsequently destroy them when the water is pumped out of the dry dock. With adequate safeguards, impacts to the endangered winter-run chinook salmon should be insignificant. F-1

General Comments

The Navy has provided survey information regarding fish trapped during dry dock operations in 1990 and 1991 (EIS/EIR Volume 2 - Technical Appendices, Appendix D, Table D-2 and December 4, 1991, correspondence to the California Department of Fish and Game). Several species of particular concern to NMFS, including chinook salmon, steelhead trout, sturgeon, and striped bass were detected in this survey. F-2

To preclude unforeseen future adverse impacts to all fish species subject to entrapment and entrainment during dry dock operations as presently conducted, NMFS concurs with mitigation proposed in Chapter 4: Environmental Consequences, Section 4.6.1: Biological Resources, Proposed Action - Mare Island Reuse Plan, Mitigation 4 for Impacts to Sensitive Fish and Wildlife, and makes the following recommendations:

- Dry dock operations should include measures for the salvage of trapped fish species.
- Dredging operations should be conducted in a manner which avoids entrainment of fish.

Endangered Species Act Issues

The Sacramento River endangered winter-run chinook salmon is listed as endangered under the federal Endangered Species Act. However, based on a review of all available information, NMFS concurs with the EIS/EIR finding that, based on the limited number of fish recorded in the dry dock survey of 1990 and 1991, fully mitigated dry dock operations (consistent with the above conditions) are not likely to jeopardize the continued survival of winter-run chinook salmon. F-3

This letter concludes section 7 consultation for the endangered winter-run chinook salmon under the federal Endangered Species Act. If new information becomes available indicating that winter-run chinook may be adversely affected by the preferred alternative, further consultation will be necessary.

If you have questions concerning these comments, please contact Mr. Dante Maragni at 707-575-6053 or Mr. Gary Stern at 707-575-6060 at 777 Sonoma Avenue, Room 325, Santa Rosa, California 95404-6528; FAX 707-578-3435.

Sincerely,

Hilda Diaz-Soltero
Regional Director

Response to Comments

Response to Comment F-1. Section 4.6.1, Impact 4 and Mitigation 4 have been deleted, as our analysis has shown that the use of the dry docks would not constitute a significant impact to winter-run Chinook salmon, in concurrence with the commenter's conclusion. The following text has been added to the information on Impacts to Sensitive Fish and Wildlife, Nonsignificant Impacts:

> "Incidental take permits may include any of the following measures (see Biological Opinion in Appendix F for more detail). Diversions should be screened using a maximum approach velocity of 0.2 feet per second. Destruction of spawning and refugial habitat and may be minimized by avoiding areas with submersed plants or enhancing or creating similar habitat (USFWS 1997)."

Response to Comment F-2. The recommendations are included in this Final EIS/EIR, as described in the response to Comment F-1.

Response to Comment F-3. The comment concurring with EIS/EIR findings that mitigated dry dock operations are not likely to jeopardize the continued survival of winter-run Chinook salmon is noted. The comment that NOAA consultation under Section 7 is completed is noted.

Letter G

STATE OF CALIFORNIA — PETE WILSON, *Governor*

CALIFORNIA STATE LANDS COMMISSION
100 Howe Avenue, Suite 100 South
Sacramento, CA 95825-8202

ROBERT C. HIGHT, *Executive Officer*
(916) 574-1800 FAX (916) 574-1810
California Relay Service From TDD Phone **1-800-735-2922**
from Voice Phone **1-800-735-2929**

Contact Phone:(916)574-1858
Contact FAX: (916) 574-1925

October 13, 1995

File Ref: W25116

Jerry Hemstock, Code 185JH
Engineering Field Activity West
900 Commodore Drive
San Bruno, CA 94066-5006

Ann Merideth
Director
Development Services Department
City of Vallejo
555 Santa Clara Street
Vallejo, CA 94590

RE: Comments to Draft EIS/EIR, Mare Island; SCH #94093029

Dear Mr. Hemstock and Ms. Merideth:

This is written to provide our comments to the Draft EIS/EIR for the Disposal and Reuse of Mare Island Naval Shipyard. This document has been designated State Clearinghouse Number 94093029.

Please refer to our October 4, 1994, comment to the Notice of Preparation of the EIS/EIR for Mare Island, which described the State acts in 1854, 1897, and in 1963 through which California transferred its tide and submerged lands surrounding Mare Island to the United States. The purpose for these transfers was to make public trust land available for the federal military effort. In each case, the statute in which the transfer occurred stated that, upon the occurrence of particular events, the transferred lands would revert to California. G-1

In the year since our comment to the Notice of Preparation, the State Lands Commission has completed extensive research to identify public trust lands which revert at Mare Island. That research culminated in a title report issued April 17, 1995, which discusses the history of tide and submerged lands development at Mare Island and contains maps showing the reversionary G-2

lands. Aside from identifying California's reversionary lands, the State Lands Commission has proposed to the City of Vallejo a comprehensive settlement of public trust land ownership. The settlement would include the United States as a party and would be entered into now, resulting in defined areas of public trust land and land freed of the trust. It would include a structure for when actual reversion would occur, thereby supporting the federal obligation to maintain all of Mare Island prior to a change in ownership. G-2

Our principal concern with the draft EIS/EIR is that it does not correctly depict in Figure 1-5 the lands which will revert to California. This occurs in three areas: First, on the east side of the Island, where the specific acts of the Legislature included lands lying in Reuse Areas 1 though 5 and in Areas 9, 10, and 12. Second, a similar inaccuracy exists along the south side of the Island, where the Legislature transferred title to public trust lands in Reuse Area 12. And third, on the west side of the Island, where reversionary lands extend farther inland than shown on figure 1-5. For an accurate depiction of the property subject to reversion, please refer to the April 17, 1995, title report of this Commission, a copy of which has been provided to City of Vallejo and EFA-West staffs. The land title agreement proposed by this Commission would deal comprehensively with the land subject to reversion. G-3

Thank you for the opportunity to comment to the Draft EIS/EIR.

Sincerely,

David Plummer
Public Land Manager

cc: Robert Hight, State Lands Commission
Ben Williams, Office of Planning and Research

Response to Comments

Response to Comment G-1. The comment referencing the previous letter from the State Lands Commission and the State acts in 1854, 1897 and 1963 that established the reversion of certain lands to California is noted.

Response to Comment G-2. The comment identifying the proposal to Vallejo by the State Lands Commission for settlement of public trust land ownership is noted. No agreement has been reached between the State and Vallejo.

Response to Comment G-3. Figure 1-5 has been revised to depict land ownership at Mare Island, including state reversionary land, as determined by the Navy in its study of land status at Mare Island.

Letter H

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY PETE WILSON, *Governor*

DEPARTMENT OF TRANSPORTATION
BOX 23660
OAKLAND, CA 94623-0660
(510) 286-4444
TDD (510) 286-4454

October 16, 1995

SOL-37-R7.21
SCH94093029
SOL037103

Mr. Jerry Hemstock (Code 18522)
Commanding Officer
Engineering Field Activity West
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, CA 94066-5006

Dear Mr. Hemstock:

Re: Draft Environmental Impact Statement/Environmental Impact Report (DEIS/DEIR) For the Disposal and Reuse of Mare Island Naval Shipyard, Vallejo, California.

Thank you for including the California State Department of Transportation (Caltrans) in the environmental review process. We have reviewed the DEIS/DEIR and wish to forward the following comments:

1. Referring to page 3-148 in Volume I of the DEIS/DEIR, section 3.9.8 *Transportation Plans and Regulations,* first sentence on the page, it is true that Caltrans has considered the projected traffic increases due to the Mare Island reuse in our traffic model for the White Slough freeway project. Assembly Bill 719 limits the freeway project to an ultimate 4-lane facility across White Slough. Our traffic projections indicate that future volumes would exceed the capacity of the proposed 4-lane facility (LOS F). We anticipate that our project will provide additional capacity to help relieve existing traffic congestion, however, we cannot "ensure adequate capacity" to accommodate project increases. H-1

2. Referring to page 4-89 in Volume 1, second paragraph, which begins, "Roadway capacities at I-80 and SR 37 would be exceeded in the year 2020 with or without reuse..." This statement is not consistent with the data shown in Figure 4-1 (page 4-92), *Future: Peak Hour Reserve Capacity for Primary Access Routes,* which shows that the capacities of I-80 and SR 37 will not be exceeded in the future. Please clarify. H-2

3. The data shown in Figure 4-2 (page 4-96), *Proposed Action: Peak Hour Reserve Capacity for Primary Access Routes*, and Figure 4-5 (page 4-113), *No Action Alternative: Peak Hour Reserve Capacity for Primary Access Routes*, are not consistent as seen in a historical perspective. It would follow that in the year 2020 alternative (Figure 4-2) there would be higher traffic volumes, because it assumes "historic shipyard conditions," than the "No Action" alternative which should have less trip generation. A comparison of Figures 4-2 and 4-5 does show that Curtola Parkway, Tennessee Street and SR 37 have lower traffic volumes in the "No Action" alternative, but traffic volumes on I-80 are higher in the "No Action" alternative. Please explain. H-3

4. Referring to page 4-98, first paragraph, which states, " The Proposed Action would contribute to regionally-induced congestion on SR 37 and I-80....This is not considered to be significant...etc.." Based upon an interpretation of Figures 4-1 and 4-2, the "Proposed Action" alternative appears to have a significant adverse impact on I-80. Please clarify.

The data shown in Figure 4-3 (page 4-103), the "Medium Density Alternative" and in Figure 4-4 (page 4-108), the "Open Space Alternative," appears to project substantial adverse impacts on I-80, when compared with Figure 4-1. In addition, the data in Figure 4-4 also shows an adverse impact on a segment of SR 37. H-4

The above two examples point out the inconsistent information in Figure 4-1. If Figures 4-2, -3, -4, -5 represent all alternatives under consideration, what is the importance and/or significance of figure 4-1? Figure 4-1 is future year 2020 as is Figure 4-2. It appears that Figure 4-1 is yet another future scenario which may not be necessary. Also it would have been much clearer to refer to Figure 3-23 (page 3-129), *Primary Access Routes*, as existing conditions.

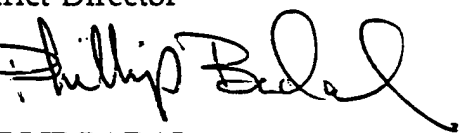
5. This study uses a freeway capacity of 1950 vehicle/lane/hour. Recent studies and the revised Highway Capacity Manual indicate that freeway capacities are as high as 2300 vehicle/lane/hour, depending on various factors. Also in the study, the concept of reserve capacity is defined as "the number of additional vehicles per hour that the roadway can carry" (See footnote page 3-128). The Highway Capacity Manual defines capacity as "a rate of vehicular or person flow during a specified period, which is most often a peak 15-min. period. Capacity does not refer to the maximum volume that can be accommodated during an hour." H-5

The traffic analysis should have included AM peak data as well, since PM peak data alone is frequently insufficient to evaluate all impacts. The AM peak should not be regarded as merely the "mirror image" of the PM peak. H-6

We appreciate the opportunity to work with you on this project and wish to continue close correspondence on any new developments. Should you have any questions regarding these comments, please contact Salimah As-Sabur of my staff at (510) 286-5583.

Sincerely,

JOE BROWNE
District Director

By: 

PHILLIP BADAL
District Branch Chief
IGR/CEQA

cc: Dana Lidster, SCH
Craig Goldblatt, MTC
Ann Meredith, City of Vallejo

Response to Comments

Response to Comment H-1. This information is noted. The phrase "to ensure adequate capacity" is deleted from the referenced EIS/EIR text.

Response to Comment H-2. EIS/EIR Figure 4-1 was incorrect and has been revised. The revised figure indicates that roadway capacities at I-80 and SR 37 would be exceeded in 2020 without reuse.

Response to Comment H-3. It is correct that the No Action Alternative (Figure 4-5) would have less trip generation than the Reuse Plan Alternative (Figure 4-2). This is shown by the reduction in volumes on Curtola Parkway, Tennessee Street, and SR 37. The reason for higher volumes on the reported section of I-80 with the No Action Alternative is due to several factors—the Reuse Plan Alternative assumes the southern crossing is in place (a major factor in overall traffic distribution to and from the island), assumes differing capacities at the island's north access, and would result in very different land use interactions between Vallejo and the region—one being naval base influenced and one not. These factors, in the context of the city's regionwide model, resulted in slightly higher volumes at the one reporting location along I-80. It would be expected that other locations along I-80 north and south of Tennessee Street would have lower volumes under the No Action Alternative compared to the Reuse Plan Alternative.

Response to Comment H-4. Please refer to revised Figure 4-1, which shows the accurate "Future Condition" traffic volumes and roadway capacities. As shown, Future Conditions on I-80 and SR 37 would result in slightly less reserve capacity (at 2 reported locations) than with the Reuse Plan Alternative and even less reserve capacity when contrasted with the Medium Density Alternative and Open Space Alternative conditions.

Response to Comment H-5. As stated in EIS/EIR Appendix G under Reserve Capacity, "Typically, Caltrans uses 1900-2000 vehicles per hour per lane capacity for freeways. In the EIS/EIR, a capacity of 1950 vehicles per hour per lane was used for the I-80 freeway, resulting in a 1-way (3-lane) capacity of 5,850 vehicles per hour (i.e., 5,850/3 = 1,950). This is the directional capacity shown, for example, for the I-80 freeway, and is generally acceptable for planning purposes for freeways." The 1950 VPH capacity was used to correspond with freeway capacities used in the Vallejo city-wide model (1988), as well as to present a conservative analysis of impacts.

Since freeway capacity was measured by number of vehicles/lane/hour, reserve capacity as identified in the EIS/EIR illustrates the difference between the projected hourly capacity and demand. It is noted that this definition differs somewhat from the definition of capacity contained in the Highway Capacity Manual.

Response to Comment H-6. It is noted that the AM peak traffic hour is not the mirror image of the PM peak traffic hour. However, because traffic count data provided by Vallejo demonstrated that the greater peak traffic hour historically occurred at study intersections during the PM peak-hour, the analysis was focused to present the most conservative analysis of peak-hour conditions.

STATE OF CALIFORNIA—CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY PETE WILSON, *Governor*

DEPARTMENT OF TOXIC SUBSTANCES CONTROL
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October 26, 1995

Mr. Jerry Hemstock
Commanding Officer
Engineering Field Activity West
Naval Facilities Engineering Command
900 Commodore Drive (Code 18522)
San Bruno, California 94066-5006

Dear Mr. Hemstock:

Thank you for the opportunity to comment on the Draft Mare Island Naval Shipyard Disposal and Reuse Environmental Impact Statement/Environmental Impact Report. We found the document to be generally well written and concise. Following please find our comments on specific sections.

Page ES-18, Hazardous Materials and Waste: The last sentence should include Federal Resource Conservation and Recovery Act (RCRA) hazardous waste management requirements in addition to State Health and Safety Code requirements. As reuse of the base is implemented, RCRA requirements would apply to small and large quantity generators, who may eventually be located at MINSY. I-1

Page 1-8, Contaminated Site Cleanup, first paragraph: The last sentence reads, "Characterization and remediation is ongoing and will not be complete by the time of closure, but will be complete before transfer of the property from the Navy." This is not necessarily correct. Pursuant to Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 120(h)(3), all remedial action is considered to have been taken if the construction and installation of an approved remedial design has been completed, and the remedy has been demonstrated to the Administrator to be operating properly and successfully. It is at this point that property can be transferred. This clarification of when "all remedial action has been taken" was added in 1992 under Community Environmental Response Facilitation Act (CERFA) legislation. I-2 Note that petroleum is excluded as a CERCLA hazardous substance. A determination that "all remedial action has been taken" would not necessarily include petroleum contamination (e.g. comingled plume). I-3

Page 2-6, First paragraph states that: "The Navy would be responsible for environmental remediation to allow reuse per the reuse plan, while future land owners, would be responsible for I-4

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improvements necessary to support reuse activities..." While I believe it is the intent of the Navy to remediate in order to accommodate the City's reuse plans, there is always a possibility that constraints in technology, cost, or other factors, would prevent the area from being remediated to that degree. Also, the Navy would be required to remediate pursuant to CERCLA and State requirements, which may in some cases, be more stringent than what might be needed to implement the reuse plan. I-4

Page 3-179, Section 3.13.1, Hazardous Materials Management: The document states that, "The EBS is a preliminary assessment and summary of all known and suspected areas where hazardous materials and/or petroleum products have been handled, stored, disposed of or released within the boundaries of the Naval Shipyard and adjacent areas." While most of this is an accurate statement, we disagree with referring to an Environmental Baseline Survey (EBS) as a preliminary assessment. The term, Preliminary Assessment, is recognized under CERCLA and the National Contingency Plan as a specific component in the cleanup process. An EBS is conducted pursuant to Department of Defense (DoD) guidance, not under a recognized regulatory program. While some of the elements conducted under a Preliminary Assessment and under the EBS are the same, they are conducted for different purposes and should not be confused with each other. I-5

Page 3-180, Second paragraph: Please add "State requirements" to the last sentence so that it states, "Materials that are not redistributed or sold will be disposed of off-site in accordance with RCRA and State requirements." I-6

Page 3-180, Third paragraph: Have pesticides been considered as a hazardous material that will continue to be used during caretaker period? It seems that maintenance of buildings and grounds would necessitate this, and as such, should be noted. I-7

Page 3-181, Second paragraph: The first sentence implies that hazardous waste includes radioactive waste. Neither federal nor state regulations regulate radioactive waste as a hazardous waste. Please reword this sentence so that this inference is not made. Additionally, please add "State requirements" to the first sentence that begins, "By the time of closure, shipyard hazardous waste, excluding radioactive and mixed wastes, will be collected..." Under CERCLA, radionuclides are regulated as a hazardous <u>substance</u>. RCRA does not regulate radionuclides as a hazardous <u>waste</u>. I-8

Page 3-181, Fourth paragraph: The second sentence states, "Portions of Mare Island involved in the IRP may be excluded from disposal and reuse until such time as they are determined to be "clean." We suggest you change the word "clean" to "remediated". I-9

Page 3-183, Hazard Ranking System Section: This section states that facilities which are listed on the National Priority List (NPL) receive the highest priority. The following sentence notes that Mare Island is not on the NPL. This could be misleading. The fact that Mare Island is a closing base, however, and receives Base Realignment and Closure funds for cleanup, ensures that it receives as high a priority for cleanup as a base on the NPL would. Additionally, while Mare Island has been recommended by United States Environmental Protection Agency (U.S. EPA) to be included on the NPL, the State of California has not agreed to the listing, and EPA therefore, per law, will not list Mare Island on the NPL. I-10

Page 3-196, Third paragraph: This paragraph notes that, "Minimal use of pesticides is expected at Mare Island following base closure. The types of pesticides are likely to be consistent with those currently in use." It might be more accurate to say that minimal use of pesticides by the Navy is expected at Mare Island following base closure. The golf course and other areas are to be leased by users who will continue to apply pesticides in order to keep the areas in good condition. In fact, if the golf course is expanded to 18 holes, as is projected, pesticide use would probably increase. I-11

Page 3-199, Section 3.13.10, Medical and Biohazardous Waste: The section states that, "Wastes have included small amounts of laboratory reagents, x-ray film developing and fixing solutions, solid wastes (such as wound dressings), and empty or out-of-date pharmaceutical containers." Please note that laboratory reagents, x-ray film developing and fixing solutions would be considered hazardous wastes, not medical or biohazardous waste. I-12

Page 3-204, Section 3.13.13, RCRA: The section states that, "The State of California implemented the requirements of RCRA under "interim authorization" from the federal government through enforcement of the California Hazardous Waste Control Law (HWCL) which provides regulations that equal or exceed the federal standards for hazardous waste management." In fact, the I-13

Hazardous Waste Control law was enacted in 1972, existing before RCRA did. Also, it may be more accurate to say that regulations were promulgated pursuant to the HWCL that equal or exceed the federal standards for hazardous waste management. Finally, the State received RCRA authorization in August of 1992, not 1993. Please correct the document accordingly. I-13

Page 3-204, Section 3.13.13, CERCLA: Please add the most current information regarding the NPL listing proposal and rejection from the State for Mare Island. I-14

Page 3-205, Section 3.13.13, CERFA: The first paragraph describes the part of CERFA which includes identification of uncontaminated property. The second thing that CERFA did, which is just as important, and not noted here, is that it added clarification as to when "all remedial action has been taken". Specifically, it added language in Section 120(h)(3) of CERCLA to state, "For purposes of subparagraph (B)(I), all remedial action described in such subparagraph has been taken if the construction and installation of an approved remedial design has been completed, and the remedy has been demonstrated to the Administrator to be operating property and successfully. The carrying out of long-term pumping and treating, or operation and maintenance, after the remedy has been demonstrated to the Administrator to be operating properly and successfully does not preclude the transfer of the property." I-15

Page 3-206: Please change the first sentence to add the underlined portions in order to read, "The DoD with regulatory participation can develop a site-specific <u>or supplemental environmental</u> baseline survey, <u>or in specific cases, use the basewide EBS</u> and a FOSL or FOST for the property." I-16 Additionally, the last sentence states, "A FOST may only be issued for clean properties and does not include land use restrictions." This is not true. There are instances in which property, for various reasons including technology or funding constraints, cannot be remediated to residential levels and will require deed restrictions on the property. Please change this sentence to say that, "A FOST may only be issued for properties on which all remedial actions necessary to protect human health and the environment with respect to any such substance remaining on the property has been taken (pursuant to CERCLA 120(h)(3))." I-17

Page 4-153: Please add the underlined to the sentence that states, "Once the responsibilities of hazardous waste management are allocated to individual organizations, proficiency with those materials and spill response plans may be required by RCRA, State and local regulations." I-18

The last sentence states that, "The presence of numerous independent operators/owners on the base would change the existing regulatory requirements and may increase the regulatory burden relative to hazardous waste management." The additional presence of tenants would not change existing regulations, but may change how the regulations are currently implemented with the present state of hazardous waste management. Please change the document accordingly. I-19

Table 4-29 indicates that there would not be a significant level of impact under any of three scenarios. We find it difficult to determine how this conclusion was arrived at, without knowing what industries may eventually site at Mare Island. Please provide an explanation of how this determination was made. I-20

Please don't hesitate to contact me or Mr. Russell Grace at (916) 323-3438 if you have any questions regarding these comments.

Sincerely,

Russell D. Grace

Diana Peebler
Environmental Assessment and
Reuse Specialist
Base Closure and Conversion
Office of Military Facilities

cc: Ms. Ann Meredith
Director
City of Vallejo
Development Services Department
555 Santa Clara Street
Vallejo, California 94590

Response to Comments

Response to Comment I-1. The EIS/EIR Executive Summary, Environmental Consequences, second paragraph under Hazardous Materials and Waste, has been revised to read:

> "No significant impacts to hazardous materials would occur under any of the reuse alternatives. As reuse is implemented, hazardous waste management would be regulated under Federal Resource Conservation and Recovery Act (RCRA), 42 U.S.C. §6901 *et seq.*, hazardous waste management requirements and state health and safety code requirements. The impacts associated with relocating the rifle range to the proposed regional park, proposed under the Reuse Plan Alternative, would also be subject to RCRA requirements. Properties that contain or that potentially contain contamination may be transferred prior to completion of environmental remediation only if conditions listed in the amended Comprehensive Environmental Response Facilitation Act (CERCLA) regulations, 42 U.S.C. §9610 *et seq.*, are met."

Response to Comment I-2. Comment noted. EIS/EIR Section 4.13, second paragraph, has been revised to include the most recent status of remediation activities, as follows:

> "Cleanup of contaminated sites at Mare Island is the responsibility of the Navy and is currently in progress. Identification of the contaminated sites is ongoing. Identified sites will be characterized and remediation response actions will be selected and implemented. Operation and maintenance of the response actions will continue until the cleanup is complete."

Response to Comment I-3. It is noted that no determination of remediation is required for petroleum.

Response to Comment I-4. The discussion of the Navy's responsibility to remediate is provided in Chapters 1, 3 and 4. Further discussion is provided in Chapter 3, Section 3.13, wherein the specific laws and regulations applicable to hazardous substances cleanup are described. Impacts that could occur through disposal and reuse are described in Chapter 4, Section 4.13. The EIS/EIR discussion reflects amendments to CERCLA that require all Federal facilities to comply with state and Federal laws. Specifically, EIS/EIR Section 3.13.13 describes CERFA requirements.

Response to Comment I-5. EIS/EIR Section 3.13.1, first paragraph, second sentence, has been revised to read:

> "The EBS is a preliminary evaluation and summary of all known and suspected areas where hazardous materials or petroleum products have been handled, stored, disposed of, or released within the boundaries of the former shipyard and adjacent areas."

Response to Comment I-6. EIS/EIR Section 3.13.1, second paragraph, last sentence, has been revised to read:

> "Materials that were not redistributed or sold subsequently were disposed of off-site, in accordance with Resource Conservation and Recovery Act (RCRA), 42 U.S.C. §6901 *et seq.*, and state requirements."

Response to Comment I-7. EIS/EIR Section 3.13.1, third paragraph, second and third sentences, have been revised to read:

> "These materials include lubricants, degreasers, cleaners, and pesticides used for general maintenance activities. Interim leasing activities also include use of coatings, abrasive blasting, and welding."

Response to Comment I-8. EIS/EIR Section 3.13.2, fifth paragraph, has been revised to read:

> "At the time of closure, shipyard hazardous wastes were collected from all designated areas, transferred to the DRMO, and then disposed of off-site, in accordance with RCRA and state requirements. Radioactive and mixed wastes were handled separately, in accordance with Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. §9601 *et seq.*, RCRA, and state requirements, and were disposed of prior to closure (with the exception of a small quantity of G-RAM low level waste, which was removed shortly after closure)."

Response to Comment I-9. EIS/EIR Section 3.13.3, first paragraph, second sentence, has been revised to read:

> "Portions of Mare Island involved in the IRP may be delayed from disposal and reuse until such time as they are determined to be 'remediated'."

Response to Comment I-10. EIS/EIR Section 3.13.3, end of the Hazard Ranking System (HRS) paragraph, has been revised to read:

> "Mare Island is not on the NPL. The US EPA has recommended the site to be included on the NPL; however, the State of California has not agreed to the listing, and the US EPA, per law, will not list Mare Island on the NPL. Despite the site's absence from the list, the fact that Mare Island is a closing base and received Base Realignment and Closure funds for cleanup ensures that it will receive as high a priority for cleanup as a base on the NPL would."

Response to Comment I-11. EIS/EIR Section 3.13.7, sixth paragraph, has been revised to read:

> "Pesticides are being used in small amounts at Mare Island during the caretaker period. Mosquito abatement practices are continuing."

Response to Comment I-12. EIS/EIR Section 3.13.10, second paragraph, third sentence, has been revised to read:

> "Wastes included small amounts of laboratory reagent, x-ray film development and fixing solution solid wastes (such as wound dressings), and empty or out-of-date pharmaceutical containers."

Response to Comment I-13. EIS/EIR Section 3.13.13, the RCRA paragraph, has been revised to read:

> "In response to the need to more closely regulate the ongoing handling, storage, transportation, and disposal of hazardous wastes, the US Congress passed RCRA, 42 U.S.C. 6901 *et seq.*, of 1976. RCRA presents the Federal regulations for operating hazardous waste storage, treatment, and disposal sites. Prior to RCRA, the State of California had passed the Hazardous Waste Control Law (HWCL) in 1972. This law provides regulations that equal or exceed the Federal standards set by RCRA for hazardous waste management. California was given

'interim authorization' to implement RCRA through enforcement of the HWCL. Final authorization for the state to implement RCRA was given in 1993. The responsible agency for enforcing RCRA and HWCL is the California Environmental Protection Agency, Department of Toxic Substance Control."

Response to Comment I-14. EIS/EIR Section 3.13.13, end of the CERCLA paragraph, has been revised to read:

"As noted previously, Mare Island is not on the NPL. The US EPA has recommended the site to be included on the NPL, but the State of California has not agreed to the listing, and the US EPA, per law, will not list Mare Island on the NPL."

Response to Comment I-15. The following text has been added to EIS/EIR Section 3.13.13, CERFA, in the first paragraph:

"CERFA also provided clarification as to when 'all remedial action has been taken.' It also defined that all remedial action has been taken if construction and installation of an approved remedial design has been completed and the remedy has been demonstrated to the Administrator to be operating properly and successfully. Carrying out long-term pumping and treating or operation and maintenance after the remedy has been demonstrated to be operating properly and successfully does not preclude the transfer of the property."

Response to Comment I-16. EIS/EIR Section 3.13.3, last paragraph, third sentence, has been revised to read:

"The DOD, with regulatory participation, can develop a site-specific or supplemental environmental baseline survey, or in specific cases, use the basewide EBS and a FOSL or FOST for the property."

Response to Comment I-17. EIS/EIR Section 3.13.3, last paragraph, fifth sentence, has been revised to read:

"A FOST may be issued only for properties on which all environmental remediation is complete, or that otherwise meet all the conditions of the amended CERCLA regulations noted above (CERCLA 120 as amended by Section 334 of FY1997 Defense Authorization Act)."

Response to Comment I-18. EIS/EIR Section 4.13, seventh full paragraph, second sentence, has been revised to read:

"Once the responsibilities of hazardous waste management are allocated to individual organizations, proficiency with those materials and spill response plans may be required by Resource Conservation and Recovery Act (RCRA), 42 U.S.C. §6901 *et seq.*, state, and local regulations."

Response to Comment I-19. EIS/EIR Section 4.13, eighth full paragraph, first sentence, has been revised to read:

"The presence of numerous independent operators/owners on the property may change the implementation of existing regulatory requirements and may increase the regulatory burden relative to hazardous waste management."

Response to Comment I-20. The no significant impact conclusion is based on the significance criteria listed in EIS/EIR Section 4.13. This conclusion assumes that any new hazardous material handlers or hazardous waste generators will fall under the existing regulatory requirements and will operate in a safe and responsible manner. It would be inappropriate to assume that any new tenants or land owners would be irresponsible or that they would operate outside the regulations. The reason that it was determined that there would be "no significant impact" versus "no impact" was the fact that there may be increased risk due to increased quantities or materials or wastes being handled, stored, or generated. This potential for increased risk precludes a no impact determination. The land conveyance restrictions and remediation depth requirements for sites contaminated by unexploded ordnance are specified in Section 2-1.13.6e of Navy Technical Manual NAVSEA OP 5 Volume 1.

Letter J

PETE WILSON Governor

STATE OF CALIFORNIA

SAN FRANCISCO BAY CONSERVATION AND DEVELOPMENT COMMISSION

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October 30, 1995

Mr. Jerry Hemstock
Commanding Officer
Engineering Field Activity West
Western Division, Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, CA 94066-5006

SUBJECT: *Draft Environmental Impact Statement/Environmental Impact Report for Mare Island Naval Shipyard Disposal and Reuse*

Dear Mr. Hemstock:

Thank you for the opportunity to comment on the *Draft Environmental Impact Statement/Report (DEIS/R) for Mare Island Naval Shipyard (MINSY) Disposal and Reuse* (August, 1995), issued by the U.S. Department of the Navy and the City of Vallejo. The Draft Environmental Impact Statement/Report (DEIS/R) analyzes potential impacts associated with the disposal of federal surplus lands at MINSY and the build-out of the Mare Island Reuse Plan developed by the City of Vallejo. The Commission staff commented on materials regarding future reuse options for MINSY, most recently in a letter dated October 27, 1994 (see attached).

While the San Francisco Bay Conservation and Development Commission (Commission) itself has not had an opportunity to review the DEIS/R, the following are staff comments based on the federal Coastal Zone Management Act, the McAteer-Petris Act, the San Francisco Bay Plan, and the San Francisco Bay Area Seaport Plan. Together, these laws and policies, among others, constitute the Commission's federally-approved coastal zone management program for San Francisco Bay.

Jurisdiction

Under the McAteer-Petris Act, the Commission has jurisdiction in the Bay and shoreline band at MINSY. The Commission's Bay jurisdiction includes all areas that are subject to tidal action up to the mean high tide line, or in tidal marshlands up to five feet above mean sea level including all sloughs, tidelands, and submerged lands. The shoreline band jurisdiction includes all areas 100 feet inland and parallel to the shoreline. The San Francisco Bay Plan Map 15 designates MINSY as a port priority use and water-related industrial area when not needed by the Navy. Bay Plan Map 15 notes that "if and when [Mare Island Naval Shipyard is] not needed by Navy, give first consideration to port and water-related industry...See Seaport Plan.".

To determine the project's consistency with the Commission's laws and policies, the Final Environmental Impact Statement/Report (FEIS/R) should contain a map that generally shows the project in relation to the Commission's jurisdiction. Page 3-13 of the DEIS/R indicates that the mean high tide (MHT) line at Mare Island is 3.34 feet NGVD. However, our calculation shows the MHT line at Mare Island to be 2.81 feet NGVD. Additionally, our calculation of five feet above Mean Sea Level is 5.7 NGVD at the shipyard. The map included in the FEIS/R should also show the correct shoreline. If there continues to be a discrepancy between the two MHT estimates, the FEIS/R should address this matter. In addition, the map should generally show other areas of the Commission's jurisdiction affected by the project including: the shoreline band jurisdiction, sloughs, tidelands, and submerged lands. J-1

As required under the federal Coastal Zone Management Act, the disposal of MINSY will require a consistency determination from the Commission. The DEIS/R provides conceptual information about future plans for the shipyard, which would likely be too general to allow for a thorough evaluation of the proposed disposal and Reuse Plan's consistency with the Commission's federally-approved coastal zone management program for San Francisco Bay. As we have previously discussed, the staff of both the Commission and the U.S. Navy should discuss soon the type and extent of information necessary to conduct a federal consistency review of the project. J-2

Once the shipyard is disposed by the Navy, federal projects, licenses, permits, or grants at MINSY that affect the coastal zone would still likely require a federal consistency determination, and, if they affect water quality, a Commission permit. Other projects, which occur within the Commission's jurisdiction and are undertaken by non-federal entities, will require a Commission permit. J-3

Consistency with Priority Use Designations

The San Francisco Bay Plan Map 15 indicates that MINSY, when and if not needed by the Navy, should be reserved for port and water-related uses. These designations ensure that adequate waterfront areas are reserved for future port and water-related industrial development to prevent unnecessary filling of the Bay when such uses expand.

In our earlier letter of October 27, 1994, we stated that the Commission is presently updating the Seaport Plan. This letter also indicated: "An analysis of port facilities originally indicated a need to retain an area large enough to accommodate two break bulk cargo berths (approximately 40 acres) at MINSY. The draft Military Base Evaluation for Civilian Seaport Development, prepared for the Seaport Planning Advisory Committee by Consultants, recommended that two break bulk cargo berths be located in areas designated under the Reuse Plan for Heavy Industry (zone 5) and Mixed Use (zone 3). After further evaluation, the staff has determined that break bulk cargo berths are not needed at MINSY and will make that recommendation to the Seaport Planning Advisory Committee on November 8, 1994." Page 3-14 of the DEIS/R (Section 3.1.4: Land Use Plans and Regulations) does not reflect this analysis, which should be contained in the FEIS/R to reflect the status of the Seaport Plan update. J-4

Page 3-14 of the DEIS/R states: "BCDC is currently updating the Bay Plan and is reevaluating port-related uses for the shipyard." This statement should be revised in the FEIS/R to indicate that BCDC is currently reevaluating water-related uses for the shipyard as well. Page 3-14 (¶2) of the DEIS/R states: "The port priority use designation is intended to reserve adequate waterfront areas for future port and water-related development and to prevent unnecessary filling of the Bay when such uses expand. Permitted uses in port priority use areas include marine terminals...." In the FEIS/R, in these two statements, "port priority use" should be followed by "and water-related industry". J-5

To update the Seaport Plan and to assist in the implementation of the Long Term Management Strategy (LTMS) program for dredging, the staff will recommend to the Seaport Planning Advisory Committee and the Commission that the port priority use designation be retained for the dredge material disposal facility. The Commission has initiated the Bay Plan amendment process and a public hearing on the deletion of port and water-related industry designations are scheduled for January 18, 1996. After the public hearing, the Commission will vote on the amendments, and file a notice of proposed program change with the National Oceanic and Atmospheric Administration (NOAA). Once NOAA indicates its' concurrence with the proposed amendments, any deletions of port and water-related industry designations will have the effect of law. This will likely occur in mid-March 1996. J-6

Page 4-68 to 4-69 of the DEIS/R states BCDC "...might designate Mare Island for priority use as a regional dredge material rehandling facility in the revised Seaport Plan...." In the FEIS/R this J-7

statement should be corrected to indicate that the revisions to the Bay and Seaport Plans recommended by Commission staff would designate the Mare Island dredged disposal ponds as port priority use areas within which certain uses would be consistent, such as a regional dredge material rehandling facility. J-7

The DEIS/R identifies 13 proposed Reuse Areas, not including the wetland and dredge disposal ponds located along the western side of Mare Island, and other development at off-site locations. Page 2-6 of the DEIS/R states: "Approximately 5.7 million square feet of non-residential uses...and 1,836 residential units would be in use on and off the island at buildout of the Reuse Plan. Limited redevelopment would occur in the Historic, Education, and Coral Sea Village reuse areas, and the existing wetlands and dredge disposal areas would continue to be used until they reach their capacity. Approximately 18 miles of streets would be improved, and seven miles of new road would be built. Nine signalized traffic intersections would be constructed..." Page 4-4 of the DEIS/R states: "The San Francisco Bay Plan Map 15 designated the Shipyard as a port priority use and water-related industrial area when not needed by the Navy....The Proposed Action may not be consistent with [the Bay Plan], however the final consistency determination cannot be made until reuse plans for the dry dock area are finalized and the revised Seaport Plan is completed." In the FEIS/R, this statement should be revised to indicate that unless and until the Commission changes the port and water-related industry -priority use designations for the entire shipyard, many components of the proposed Reuse Plan would likely conflict with current Bay Plan designations, including but not limited to: the industrial park (Reuse Area 1); the small business complex and loft spaces (Reuse Area 3); and the multi-family housing complex and retail facility (Reuse Area 10). J-8

Dredged Material Ponds

Historically, the majority of material dredged in the region has been disposed at sites in the Bay. The limited capacity of the primary in-Bay disposal site, near Alcatraz Island and potential adverse impacts to natural resources associated with in-Bay disposal, have brought about a need to dispose dredged material outside of the Bay. To date, however, non-tidal and reuse options in the region have been extremely limited. The Long Term Management Strategy (LTMS) program for dredging has evaluated a variety of non-tidal sites for disposal, rehandling, and reuse of dredged material, including the Mare Island dredged material ponds.

Page 4-67 of the DEIS/R states: "Prior to its identification for base closure, the LTMS task force considered, and then dropped Mare Island as a candidate for a regional upland disposal sites because of its status as a Navy installation. Base disposal has made Mare Island a much more attractive candidate for consideration in an upland disposal system. Under the LTMS process, a detailed evaluation of Mare Island would be prepared and submitted for public comment in the form of an Environmental Impact Statement." J-9

Contrary to the above-cited information provided on Page 4-67 of the DEIS/R, the Mare Island dredged material ponds have not been dropped as a potential candidate for a regional reuse and/or disposal facility. The dredged material ponds at MINSY were recently analyzed for their reuse potential through the LTMS. [1] This analysis determined that the Mare Island ponds possess great potential as a regional rehandling and/or confined disposal facility in part because: (1) they are already configured and used for disposal of dredged material; (2) there is existing access to the ponds from deep water pump-out sites along Mare Island Strait; (3) agreements have already been made between the U.S. Navy and the U.S. Fish and Wildlife Service (USFWS) to mitigate for impacts to endangered species resulting from the use of the ponds; and (4) the ponds could be

1 Gahagan & Bryant Associates, Inc. (prepared with ENTRIX, Inc.), 1994, *Reuse/Upland Site Analysis and Documentation: Reuse/Upland Site Ranking, Analysis and Documentation (Volume I), Draft*, 410 pp. w/appendices, and *Reuse/Upland Site Analysis and Documentation: Feasibility Analyses of Four Sites (Volume II), Draft* 98 pp. w/appendices.

managed to have significant long-term capacity, and could be used indefinitely if the dried material was reused off-site. As a part of the LTMS analysis, a conceptual plan for a multi-user rehandling and confined disposal facility at the shipyard's ponds was developed. Accordingly, the LTMS Management Committee has recommended that the dredged material disposal ponds at MINSY be retained and evaluated for use as a regional dredged material reuse, rehandling, and contained disposal facility, after remediation has been completed at or around the ponds. J-9

The FEIS/R should reflect the current status of the site in relation to the LTMS studies and program. Additionally, the FEIS/R should state that any detailed evaluation of the ponds at Mare Island as a regional dredged material reuse or disposal facility would not be prepared through the LTMS, but more likely through the CEQA process. J-10

Page 2-26 of the DEIS/R states: "The western half of Mare Island consists of open space lands, including tidal and nontidal wetlands and inactive dredge disposal ponds. Dredge ponds make up most of the area with ten active sites and six inactive sites.... Under the plan, the levees of the dredge ponds would be raised by four feet to ensure at least a 25-year capacity for dredged sediment storage space. The inactive dredge ponds could be reactivated in the future under the plan." The Commission staff supports this component of the proposed reuse plan at the shipyard since the Mare Island dredged material ponds appear to possess great potential as a regional reuse and/or disposal facility, and as a viable alternative to existing in-Bay disposal options for a material projected to be dredged in the future. J-11

Page 1-10 of the DEIS/R states: "Mare Island contains tide and submerged lands that were granted to the United States by the State of California for development of [MINSY]. Language appears in the conveyance legislation that these lands would revert to the state when no longer needed for United States military purposes.... The Navy is responsible for the screening and disposal of ...property that has been declared excess to the needs of the Department of the Navy as a result of the closure.... Four federal agencies indicated an interest in the transfer of excess property at the shipyard....the [U.S. Fish and Wildlife Service] requested wetland and dredge pond areas [1, 3W, and 3E], as well as Building 505 and associated land and facilities to establish an interpretive center near the dredged disposal areas."

In general, the Commission supports the U.S. Fish and Wildlife Service (USFWS) in obtaining additional tidal and non-tidal wetlands as part of the San Pablo Bay National Wildlife Refuge. The Commission staff has suggested integrating the proposed interpretive facility with the dredge pond activities so as to educate the public about the environmental impacts of dredging activities and the potential benefits of reusing dredged material in an environmentally-sound manner. However, the USFWS has indicated that dredge disposal and reuse and rehandling facilities are not consistent with the Service's primary mandate to protect and preserve wildlife (USFWS letter dated October 20, 1994). The FEIR/S should discuss whether the proposed interpretive facility is compatible with dredge disposal activities and, if deemed incompatible, whether it would be possible to mitigate by using other sites at MINSY or in the North Bay area as a USFWS interpretive facility, or by screening the dredge ponds from the proposed interpretive facility. Additionally, the FEIR/S should address whether inactive dredge ponds could be substituted for some or all of the ponds requested by USFWS. J-12

While the Commission supports beneficial reuse, rehandling, and contained disposal of dredged material, it is concerned about the potential impacts resulting from such activities on sensitive habitat and resources at the dredge ponds. Page 3-83 of the DEIS/R indicates that the salt marsh harvest mouse has been "identified in nearly all of the wetland areas of the island, including the dredge disposal areas on the western site of the island." Section 4.6.1 of the DEIS/R discusses impacts to these species associated with reuse of the dredged ponds, and presents potential mitigation measures. These measures focus on consultation with appropriate resource agencies prior to reactivation of the ponds, and modification or replacement of the existing Memorandum of Understanding (MOU) between the Navy and USFWS, which currently allows for use of the J-13

ponds in the presence of the salt marsh harvest mouse. The FEIS/R should discuss whether the mitigation—for activities including use of the dredge ponds and raising of the pond levees—provided by the Navy under the existing MOU (discussed in part on Page 3-84 of the DEIS/R) would be adequate to allow for the continued operation of the ponds. In addition, the MOU should be included as part of the technical appendix in the FEIR/S. In addition, the FEIR/S should identify and map the levees proposed for improvement at the dredge ponds, identify the amount of material needed for levee improvements, and identify whether any Bay fill would be required for this activity. J-13 J-14 J-15

Figure 3-17 of the DEIS/R depicts, among other things, the dredged disposal ponds at the shipyard. The figure shows three inactive dredge ponds that qualify as wetlands and endangered species habitat. The FEIS/R should discuss the difference in the habitat value of these three ponds and the habitat value of the others on-site, and discuss whether these three ponds could be used for disposal operations in the event Ponds 1, 3W, and 3E become a part of the USFWS's interpretive facility. Additionally, Figure 3-17 labels five separate dredged material pond areas as "USFWS Mitigation Site". The FEIS/R should clarify whether these ponds currently serve as mitigation sites and, if so, for what activities, and whether these ponds could be used for dredged material disposal operations. J-16 J-17

Figure 2-2 of the DEIS/R indicates that the proposed Reuse Areas 1, 2, 6, 7, 8, 11, 12, as well as the salt marshes extending the length of the western side of the island, are located adjacent to or within close proximity to the dredge disposal ponds. The FEIS/R should discuss the compatibility of dredged material processing operations with proposed uses for the above-referenced Reuse Areas, as well with the salt marsh area and, if necessary, ways to mitigate potential impacts resulting from dredged material disposal operations. J-18

Page 3-109 of the DEIR/S notes: "Remediation of the landfill [adjacent to Pond 4N] could reduce the usability of Pond 4N." The FEIS/R should discuss the way in which remediation of the landfill would impact Pond 4N, including impacts on potential pond capacity for dredged material, and whether inactive dredge ponds could be substituted to compensate for the potential loss of this pond and/or decreased capacity. In the event that landfill remediation involves capping and/or final closure, the FEIS/R should discuss whether it would be possible to use dredged material in the ponds for this purpose and, if so, the volume of material needed to accomplish this task. J-19

Page 3-175 of the DEIR/S indicates: "Dredged material is pumped from the dredge through a floating pipeline to an onshore underground piping system and on to the dredge spoil ponds." Figure 3-17 of the DEIR/S depicts the fixed pipelines used as a part of the Navy's dredging operations (berth front) to transport dredged material to the on-site drying ponds. Further, Page 4-5 of the DEIR/S states: "None of the [Reuse] alternatives would preclude the use of waterfront areas for offloading and pumping of dredge material to the ponds." The FEIR/S should discuss the compatibility of continued off-loading and pumping of dredged material with uses proposed for Reuse Areas 10, 5, 4, 3, and 12 (which are located in the vicinity of the pipelines) and, if necessary, ways to mitigate potential impacts. Lastly, Page 3-14 of the DEIR/S (¶2, Sentence 1) should be corrected to state "conveying" rather than "convening." J-20 J-21

Wetlands and Sensitive Habitats

The Commission staff is concerned about the potential impacts of other proposed reuse activities on wetland and sensitive habitats. Section 66605 of the McAteer-Petris Act specifies that fill in the Bay be minimized to avoid harmful effects to, among other things, the "fertility of marshes or fish or wildlife resources". In addition, the Bay Plan Policies on fish and wildlife state, in part: "Specific habitats that are needed to prevent the extinction of any species, or to maintain or increase any species that would provide substantial public benefits, should be protected, whether in the Bay or on the shoreline behind dikes...[and] [t]he benefits of fish and wildlife in the Bay should be insured for present and future generations of Californians. Therefore, to the greatest J-22

extent feasible, the remaining marshes and mudflats around the Bay, the remaining water volume and surface area of the Bay, and adequate fresh water inflow into the Bay should be maintained." As well, the Bay Plan Policies on Marshes and Mudflats state, in part: "Marshes and mudflats should be maintained to the fullest possible extent to conserve fish and wildlife and to abate air and water pollution. Filling and diking that eliminate marshes and mudflats should therefore be allowed only for purposes providing substantial public benefits and only if there is no reasonable alternative. Marshes and mudflats are an integral part to the Bay tidal system and therefore should be protected in the same manner as open water areas."

Section 4.6.1 of the DEIS/R states: "(1) Construction of the southern crossing bridge over Mare Island Strait could disturb the narrow wetland area located on federal surplus land. This area supports Mason's lilaeopsis and may provide habitat for the Suisun thistle and soft bird's-beak. Construction of the Southern crossing would remove a considerable portion of the habitat in that area and would be a significant impact; (2) Increased levels of vessel traffic from additional marina traffic [proposed Reuse Area 10] could damage existing stands of Mason's lilaeopsis and habitat for the Suisun thistle and soft bird's-beak on federal surplus land by increasing bank erosion and undercutting; (3) Development proposed for Reuse Area 10 could remove wetlands located on federal surplus land adjacent to Mare Island Strait that provide habitat for the salt marsh harvest mouse; and (4) Use of the dry docks...could significantly directly impact endangered and threatened fish, including winter-run chinook salmon, delta smelt, and Sacramento splittail. Dry dock operations can trap fish during vessel entry, and if these fish are not returned during dewatering they subsequently die when the water is pumped out of the dry dock." The FEIR/S should discuss the compatibility of the above-referenced activities with the Commission's laws and policies regarding fish and wildlife, marshes and mudflats, and use limitations in Section 66605 of the McAteer-Petris Act; additionally, the FEIS/R should note that the consistency of the proposed activities with these laws and policies of the Commission may be questionable particularly if the activities do not provide substantial public benefits and if reasonable alternatives exist. J-22

The FEIS/R should also address the compatibility of the development of the proposed marina as a part of Reuse Area 10 with the Commission's Bay Plan Policies on recreation, which state, in part: "Marinas should be allowed at any suitable site on the Bay. Unsuitable sites are those that tend to fill up rapidly with sediment; have insufficient upland; contain valuable marsh, mudflat, or other wildlife habitat...." In addition, the FEIS/R should address whether other measures to mitigate impacts associated with the southern crossing bridge construction (in addition to those listed on Page 4-56 and Page 4-60) could be included, such as alternative methods of access that would eliminate the need for the bridge (including bus service, ferry service, and lower intensity development). J-23 J-24

Page 4-52 of the DEIR/S discusses a Cooperative Agreement that was signed in 1991 by the USFWS, the state Department of Fish and Game, and MINSY, whose goal was to achieve the "protection, enhancement, and management of fish and wildlife resources" on the island. This discussion does not clarify whether the Natural Resources Management Plan exists, or whether the public and other affected regulatory agencies would have an opportunity to review and comment on the scope and content of the Natural Resources Management Plan. The FEIR/S should clarify this issue, and include the Natural Resources Management Plan in the technical appendix. J-25

Dredging and Disposal of Dredged Material

Page 4-68 of the DEIS/R states: "The type and amount of dredging required by reuse under the Proposed Action has not been determined at this time..." However, Page 4-68 presents several possible dredging scenarios for the site including a break bulk cargo terminal or shipbuilding facility and/or modern container cargo terminals which would require a deeper channel on the order of -32 feet MLLW and 45 feet MLLW respectively. In addition, Page 4-68 to 4-69 of the DEIS/R discusses potential disposal options for material dredged from the Mare Island Strait, including the J-26 J-27

disposal of material deemed suitable for aquatic disposal at the Carquinez Strait Open Water Disposal Site, or at the shipyard disposal ponds.

Page 3-106 of the DEIR/S (¶2) regarding the federal (U.S. Army Corps of Engineers) dredging of the navigation channel at Mare Island Strait states: No permit is required since the COE is the lead permitting agency for all dredging in San Francisco Bay. However, the COE, in its dredging activities, complies with the requirements of the other regulatory agencies, such as BCDC..." Further, Page 3-106 of the DEIR/S (¶5) omits reference to the Commission's consistency review process to which the Navy is subject when conducting dredging. Page 4-67 of the DEIR/S does not indicate that a Commission permit and/or federal consistency determination would be among the permit issues to be resolved before undertaking dredging, as well as disposal of dredged material, within the Commission's jurisdiction in the future. The FEIR/S should clearly state that federal dredging projects undertaken at Mare Island would continue to be subject to the Commission's federal consistency review process. J-27

The Commission's Bay Plan policies regarding dredging (see attached) indicate that regular dredging of San Francisco Bay is essential to the economic and social welfare of the San Francisco Bay region. The Bay Plan, however, recognizes that limited capacity and potential adverse impacts to Bay resources makes dredged material disposal at existing in-Bay sites problematic. The Bay Plan's Dredging Policies No. 2, 4, and 5 provide that the maximum amount of dredged material should be disposed at non-tidal sites preferably for beneficial use or at ocean sites, unless such options are infeasible. Page 3-106 and Page 3-112 (¶4) of the DEIR/S state that the RWQCB has a policy "to encourage alternatives to disposal of dredge material in the San Francisco Bay estuary". The FEIR/S should indicate that the Commission also abides by a similar policy. Additionally, Bay Plan Map 15 states that, after disposal by the Navy: "Port and industrial use [at MINSY] should be limited to shallow draft shipping unless the channels serving the site can be maintained at a cost that is reasonable in relation to other regional dredging needs." J-28

The FEIS/R should indicate that future dredging activities at Mare Island and any disposal of material within the Commission's jurisdiction would need to be consistent with the Commission's laws and policies regarding dredging. Further, the FEIS/R should indicate that dredging to depths on the order of -32 feet MLLW and -45 feet MLLW (as stated on Page 4-68 of the DEIS/R) would need to be consistent with the policy notes on the Bay Plan Map 15. J-29

Page 3-109 of the DEIS/R states that the disposal ponds at MINSY could store up to 10 feet of dredged material. At existing rehandling facilities in the region it has been found that placing dredged material at heights over four feet extends drying time. The LTMS studies regarding rehandling operations indicate that to ensure excavation and removal of dredged material from rehandling facilities in less than two years, thereby maximizing storage capacity for material dredged throughout the region, material should be stored at a maximum height of four feet. Page 4-73 of the DEIS/R notes that continued dredging at Mare Island and use of the dredged disposal ponds would "accelerate the rate of fill" in the ponds. The FEIS/R should note that this potential impact could be mitigated by placing material at a maximum lift of four feet, thereby increasing drying time and long-term material storage capacity. J-30

Lastly, through the LTMS studies it has been determined that up to 296 million cubic yards of dredged material are projected to be dredged throughout the region over the next 50 years. The LTMS conceptual plan for a multi-user rehandling and/or confined disposal facility at the shipyard's ponds indicated that up to 2.2 million cubic yards of dredged material could be rehandled at the site almost every two years and that up to 15.5 million cubic yards of dredged material could be permanently contained at the site over a 50-year period. As a regional rehandling facility, the Mare Island ponds could use up to 19 percent of the total volume of material projected to be dredged over the next 50 years while the ponds could accommodate up to 5 percent of the total volume of dredged material as a confined disposal facility. The FEIS/R should discuss the ponds potential for accommodating material dredged throughout the region. J-31

Flood Control and Levee Maintenance

The Commission's Bay Plan Policies on the safety of fills states, in part: "To prevent damage from flooding, structures on fill or near the shoreline should have adequate flood protection including consideration of future relative sea level rise as determined by competent engineers....Rights-of-way for levees protecting inland areas from tidal flooding should be sufficiently wide on the upland side to allow for future levee widening to support additional height so that no fill for levee widening is placed in the Bay."

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Page 4-71 to 4-72 of the DEIR/S indicates that potential impacts from flooding would be mitigated by, among other things, raising the base level of the site, and including an adequate setback to allow future construction of a berm or seawall to protect development along the site's eastern waterfront in the event of a substantial rise in sea level. The FEIR/S should: (1) identify all areas on the island proposed for levee improvements; (2) discuss whether Bay fill will be necessary for future shoreline protection structures such as a berm or seawall; and (3) discuss other alternatives to prevent the need for levee improvements including less intensive development.

Nonpoint Source Pollution and Stormwater Runoff

The Bay Plan Policies on water quality state, in part: "Water quality in all parts of the Bay should be maintained at a level that will support and promote the beneficial uses of the Bay...; and further Polluted runoff from projects should be controlled by the use of best management practices in order to protect the water quality and beneficial uses of the Bay...Approval of projects involving shoreline areas polluted with hazardous substances should be conditioned so that they will not cause harm to the public or the beneficial uses of the Bay."

Page 4-70 of the DEIR/S states that impacts associated with stormwater hazards associated would not be significant as, among other things: "The Reuse Plan's proposed Capital Improvement Program (CIP) includes funding for major repairs and upgrading of the island's storm water system to improve hydraulic efficiency and consolidate the outfalls to eight locations to comply with NPDES regulations for storm water quality. Implementation of the proposed CIP for storm water system improvements at the same time that new impervious surfaces are proposed in each development area, and full compliance with the RWQCB's NPDES permit requirements for the site and the City of Vallejo would reduce this impact to less than significant." The FEIR/S should: (1) identify the requirements of the existing NPDES permit; and (2) include the existing Stormwater Pollution Prevention Plan (SWPPP) in the technical appendix. The FEIR/S should, where appropriate, identify mitigation measures, such as the removal of existing impervious surfaces and the retrofit of existing parking areas with landscaping, to allow for greater infiltration of stormwater runoff. Finally, the FEIR/S should identify any land area that might be needed for stormwater retention ponds (constructed wetlands) and identify whether such areas could also provide wildlife habitat or serve as a landscape amenity.

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Traffic Impacts and Southern Crossing

The Commission is concerned that the need to improve freeway infrastructures to facilitate access to Mare Island could result in Bay fill and adversely affect Bay resources. The McAteer-Petris Act gives the Commission authority to regulate Bay fill. Section 66605 of the McAteer-Petris Act governs the uses and manner in which fill can be approved. For example, the fill must be for a water-oriented use, there must not be any alternative upland location for the fill, the fill must be the minimum necessary, and the project must offset, to the maximum extent, the loss of Bay surface area and volume. Because roadways are not a water-oriented use under the McAteer-Petris Act, the Commission cannot authorize fill for such uses. Bridges, however, are considered a water-oriented use.

The Bay Plan policies on transportation state in part: "Because of the continuing vulnerability of the Bay to filling for roads, the Commission should continue to take an active role in Bay Area

transportation planning affecting the Bay, particularly to encourage alternative methods of transportation to be used within the Bay Area that do not require fill. The Metropolitan Transportation Commission, the California Department of Transportation, the Californian Transportation Commission, the Federal Highway Administration, and other public and private transportation authorities should avoid planning or funding roads that would require fill in waterways.".

The FEIR/S should identify whether additional Bay fill would be necessary to improve SR 37 and/or the on-ramps to Mare Island, the amount of fill, and the type of habitat that would be impacted. If fill is proposed, the FEIR/S should discuss how the fill is consistent with Section 66605 of the McAteer-Petris Act. The FEIR/S should discuss the requirements of AB 719. The FEIR/S should discuss and evaluate alternative methods of access that would eliminate the need for a southern crossing including transportation demand measures, bus service, ferry service, and lower intensity development. The FEIR/S should discuss whether the existing causeway could be expanded to accommodate future traffic demands and whether the southern crossing could be built as a tunnel. The FEIR/S should discuss how the proposed southern crossing would be consistent with Section 66605 of the McAteer-Petris Act and the Commission's Bay Plan Policies on Transportation.

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The Commission is concerned that the proposed southern crossing may be located in areas that are currently designated as port, water-related industry, and park priority use areas (including portions of the Vallejo waterfront affected by the bridge construction that are designated as water-related, port and park priority use areas). The FEIR/S should discuss how a southern crossing would be consistent with the Commission's policies for water-related industry, port and park priority land use areas.

Public Access

Section 66602 of the McAteer-Petris Act states: "public access to the shoreline and waters of the San Francisco Bay is inadequate and that maximum feasible public access, consistent with the project should be provided." The Bay Plan policies on public access, in part, state that "maximum feasible access to and along the waterfront and on any permitted fills should be provided in and through every new development in the Bay or on the shoreline.... Whenever public access to the Bay is provided as a condition of development, on fill or on the shoreline, the access should be permanently guaranteed.... Public access improvements provided as a condition of any approval should be consistent with the project and the physical environment, including protection of natural resources, and provide for the public's safety and convenience. The improvements should be designed and built to encourage diverse Bay-related activities and movement to and along the shoreline, should permit barrier-free access for the physically handicapped to the maximum feasible extent, should include an ongoing maintenance program, and should be identified with appropriate signs..."

J-38

The Commission staff is concerned that the geophysical survey and other remediation evaluations may indicate that substantial portions of MINSY, which are now proposed for public access, may not be available because of safety concerns or remediation costs. In this case, the FEIR/S should identify alternative public access areas and should discuss the demand for public access facilities generated by the proposed land uses and how the Reuse Plan provides for the maximum feasible public access.

The development of a waterfront promenade at Reuse Areas 3, 4, 5, and 10 should be consistent with the Commission's public access policies. In addition, the FEIS/R should discuss the compatibility of proposed public access at Reuse Area 4 and 5 with on-going manufacturing operations as well as those associated with the dry docks and overhead cranes.

J-39

Page 2-29 of the DEIS/R states: "A 200- to 300-foot wide wetland area is also located immediately east of Reuse Area 1, along the Mare Island Strait waterfront. Under the Reuse Plan

J-40

an informal trail would traverse the wetlands behind the industrial sites in this area. The pier located at the far northern end of the island would be used for public recreation, such as fishing." Page 4-58 of the DEIR/S indicates that: "Recreational use of Reuse Areas 12 and 13 could result in an indirect adverse effect on the salt marsh harvest mouse..." The DEIR/S discusses alleviation of potential impacts of the public access on sensitive habitat area by providing access alongside these areas (e.g. along existing roads and trails only). The FEIR/S should discuss the compatibility of proposed public and recreational uses at or near such sites. J-40

The Commission staff is concerned that the proposed location of public access at MINSY might generate conflicts between recreational uses and sensitive wildlife habitat. Evaluations by CDFG and USFWS may indicate that substantial portions of MINSY, which are now proposed for public access, may not be available because of potential impacts to sensitive wildlife habitat. In this case, the FEIR/S should identify alternative public access areas. J-41

Lastly, the FEIS/R should discuss how the proposed promenade along the waterfront as well as proposed bike trails, walking, and equestrian trails would relate to or be integrated with the Bay Trail system. J-42

Marina Residential

Page 2-22 of the DEIR/S states as a part of the proposed Reuse Area 10 that the two finger piers near 18th Street would be reused as a new marina. The Commission is concerned that the marina be properly sited and designed. The Commission's Bay Plan Policies on Recreation state, in part, that "marinas should be allowed at any suitable site on the Bay. Unsuitable sites are those that tend to fill up rapidly with sediment; have insufficient upland; contain valuable marsh, mudflat, or other wildlife habitat; or are subject to unusual amounts of fog...No new marina or expansion of any existing marina should be approved unless water quality and circulation will be adequately protected and, if possible, improved....In addition, all projects approved should provide public amenities such as viewing areas, restrooms, and public parking." J-43

The FEIR/S should discuss how the proposed marina is consistent with the Commission's policies. In particular, the FEIR/S should identify whether the Reuse Plan reserves sufficient upland areas to accommodate the proposed marina facilities, public access, and other related amenities without Bay fill.

Conclusion

The Commission staff understands that the DEIS/R is a programmatic document, and thus cannot identify or resolve all potential environmental issues associated with disposal and reuse of the shipyard. As noted in the DEIS/R: "Subsequent project-level environmental review will be required under CEQA for specific development plans and programs on the site....Further NEPA review may be required by future federal users of portions of the property if actions with potentially significant impacts not addressed in this EIS/EIR are proposed." The Commission staff looks forward to participating in subsequent reviews regarding additional detailed studies, the Specific Plan, zoning changes, and development projects that result from the Reuse Plan. Ideally, these opportunities would allow us to evaluate and comment on the full extent of environmental impacts associated with future uses of the shipyard and more importantly assess the consistency of these uses with the Commission's federally-approved coastal zone management program. J-44

Should you have any questions regarding our comments, please feel free to contact Jaime Michaels of our staff.

Sincerely,

JAIME MICHAELS
Coastal Program Analyst

Enc.

cc: Commissioner Barbara Kondylis
Ms. Ann Merideth, City of Vallejo, Planning Division
LTMS Management Committee

Response to Comments

Response to Comment J-1. The reference in EIS/EIR Section 3.1.4 for MHT is corrected to read 2.81 feet NGVD. Figure 1-5 has been revised to show all land ownership, including submerged lands. Figure 3-5 shows a general depiction of lands subject to Tideland Trust. Because of the size of Mare Island, a detailed map of the scale required to show precise elevations and BCDC jurisdiction is not included in this EIS/EIR.

Response to Comment J-2. The Navy submitted consistency documentation to BCDC in May 1997. The Navy has determined that the proposed disposal is an administrative title transfer action which will have no effect on the adjacent coastal zone. In addition, subsequent reuse by Federal or non-Federal entities will be subject to the applicable requirements of the CZMA and/or the Commission's permitting requirements. On August 1, 1997, BCDC issued a Letter of Agreement concurring with the Navy's consistency documentation.

Response to Comment J-3. See response to comment J-2. It is noted that future Federal projects, licenses, permits or grants undertaken following disposal would be required to be consistent with the CZMA, as implemented by BCDC. In addition, some of these actions also could require a permit from BCDC.

Response to Comment J-4: EIS/EIR Section 3.1.4 has been revised to reflect the updates to the Seaport Plan and Bay Plan water-related industry priority designations for Mare Island.

In addition, Section 5.5, Cumulative Impacts, notes that the updated Bay and Seaport Plan designations retain the ten active dredge disposal ponds in water-related industrial priority use for a possible regional dredge material disposal or handling facility pending the outcome of the Long Term Management Strategy plan for dredge material in the San Francisco Bay Area (LTMS). All of the dredge disposal ponds, except a portion of Pond 3E, would revert to the State of California; the eastern portion of Pond 3E is being transferred to the USFWS. The revised Bay Plan proposes use of the 3 inactive dredge ponds as wetland habitat under the jurisdiction of the USFWS. On March 17, 1998, the Vallejo City Council accepted the findings of their dredge ponds feasibility study and concurred with the transfer of dredge ponds 1, 3E, and 3W to the USFWS for use as an environmental education and interpretive center.

Response to Comment J-5: As noted in the response to comment J-4, BCDC's updated Bay Plan has been completed, and the port priority and water-related industry use designations have been removed from Mare Island. As noted in response to comment J-4, the referenced text has been revised to respond to the commenter's concerns regarding water-related and port priority use designations.

Response to Comment J-6: As noted in the response to comment J-4, the referenced plan changes have been completed in 1997. All of the dredge disposal ponds, except a portion of Pond 3E, would be subject to State Lands Commission jurisdiction; the eastern portion of Pond 3E would be transferred to the USFWS. The revised Bay Plan recommends use of the 3 inactive northernmost dredge ponds as salt marsh harvest mouse wetland habitat under management of the USFWS to mitigate adverse impacts resulting from use of the other 7 ponds for dredged material disposal and rehandling. A dredge pond feasibility study contracted by the City of Vallejo concluded that the operation of 7 ponds as a confined disposal site for unsuitable material would be the most economically feasible option for Vallejo. The city subsequently adopted a resolution accepting this finding and concurred with the transfer of the 3 dredge ponds to the USFWS.

Response to Comment J-7: The section has been revised to reflect that recent revisions to the Bay Plan and Seaport Plan recommend that Mare Island dredge material disposal ponds remain in water-related industry priority use for possible dredged material disposal, pending the outcome of the LTMS. The 3

northernmost dredge material disposal ponds, including Pond 3E are recommended for use as salt marsh harvest mouse habitat by the revised Bay Plan. It should be noted that all of the dredge disposal ponds, except a portion of Pond 3E, would be subject to State Lands Commission jurisdiction; the eastern portion of Pond 3E is being transferred to the USFWS. Therefore, the impacts of the future use of these ponds are addressed in Section 5.5, Cumulative Impacts.

Response to Comment J-8: As discussed in the response to comment J-4, the referenced plan inconsistencies relating to port priority designation have been resolved with BCDC's recent revisions of the Bay and Seaport Plans. The text has been revised to reflect these changes.

Response to Comment J-9. Under the revised project description, the dredge material disposal ponds would not be located on Federal surplus lands and, therefore, potential conflicts with LTMS uses are now addressed in Section 5.5, Cumulative Impacts. As discussed in the response to Comment J-8, a portion of pond 3E would be transferred to the USFWS, and the remaining ponds would revert to the State of California. The state could lease its portion of Pond 3E, as well as Pond 3W and Pond 1, to the USFWS for wildlife refuge uses. The City of Vallejo recently concurred with the USFWS request for the use of the three ponds as a wildlife refuge (see responses to comments J-4 and J-6).

The referenced paragraph in EIS/EIR Section 4.7 was not intended to imply that Mare Island was not currently considered by the LTMS Management Committee to be a good candidate for a regional dredged material reuse or disposal facility. The EIS/EIR reflects an understanding that prior to being identified for closure, the dredge ponds on Mare Island were not considered viable as a regional handling facility. This explains, in part, why the detailed evaluation of Mare Island cited in the comment was not prepared earlier. The paragraph, now located in the EIS/EIR Section 5.5, Cumulative Impacts, has been revised to focus on the current status relative to the LTMS.

Response to Comment J-10. The Draft LTMS indicates that the Mare Island dredge ponds should be considered as possible dredge material disposal or rehandling facility sites. As noted in the response to Comment J-9, a detailed evaluation of the ponds at Mare Island as a regional dredged material reuse or disposal facility would be required. This review could be under state (CEQA) or Federal (NEPA) laws, or both, depending on the jurisdictions involved. It is noted that LTMS review is at a program level and does not address in detail the impacts of specific projects such as possible use of the Mare Island ponds for dredge material disposal or processing.

Response to Comment J-11. Since circulation of the Draft EIS/EIR, the Bay Plan has been revised to support maintaining the 3 northernmost ponds to provide wetland habitat for the salt marsh harvest mouse. The 7 dredge material disposal ponds located on state reversionary land are proposed by the revised Bay Plan to be retained as dredge material disposal ponds. Because these ponds are on land being transferred to the USFWS and land that will revert to the State Lands Commission, any future use would require the concurrence of those agencies.

Response to Comment J-12. The approximately 162 acres of excess land being transferred to the USFWS include a portion of dredge Pond 3E. As described in response to comment J-9, the USFWS believes that the active use of dredge ponds on a National Wildlife Refuge would have negative effects on migratory birds due to the long drying periods required for the deposited material, operation of heavy equipment, and the potential for deposition of contaminated sediments. This could be incompatible with wildlife refuge uses. Use of dredge ponds on state reversionary land and land being transferred to other Federal agencies is not a part of the proposed action being analyzed in this EIS/EIR. Future uses of dredge ponds for disposal or handling of dredge materials would require detailed environmental review at the time those uses are proposed, and would be the responsibility of the entity on whose land the use was proposed. It is beyond the scope of this document to determine whether it would be possible to mitigate these impacts by using other sites at Mare Island or in the North Bay as a

USFWS interpretive facility or by screening the dredge ponds from the proposed interpretive facility or whether inactive dredge ponds could be substituted for some or all of the ponds requested by USFWS.

Response to Comment J-13. While mitigation measures identified under the 1988 memorandum of understanding (MOU) (consultation 1-1-88-F-26) between the Navy and the USFWS have been determined to be adequate for the operation of the dredge ponds in the presence of the salt marsh harvest mouse, this MOU will not be satisfactory as an agreement between Vallejo or the State of California and the USFWS. The MOU will continue in effect during the caretaker period. However, Navy involvement in the MOU terminates upon property disposal or reversion; therefore, it is not included in the appendix. Different conditions are required for consultation among Federal agencies (under Section 7 of the Federal Endangered Species Act) and between a non-Federal entity (under Section 10a of the Federal Endangered Species Act) and the USFWS. Details on levee improvements should be provided by the city or other applicant when a specific project is identified.

Response to Comment J-14. A copy of the MOU is available for review at Vallejo and at the Navy's EFA West office in San Bruno, California.

Response to Comment J-15. Improvements to and operation of dredge ponds would occur primarily on state reversionary land or on land being transferred to the USFWS. These actions would not be considered under disposal and reuse of surplus lands. Identification and mapping of levees proposed for improvement at the dredge ponds, identification of the amount of material needed for levee improvements, and identification of whether any bay fill would be required for this activity would be speculative at this time, and would be beyond the scope of the cumulative analysis included in this programmatic EIS/EIR.

Response to Comment J-16. The possibility of inactive dredge ponds being traded for dredge ponds in the area that may be used by the USFWS is an issue that must be resolved through Section 7 or 10a consultation with that agency. The habitat value of the 3 ponds also would be addressed during the consultation process. In general, if habitat is available to support an endangered or threatened species, then regardless of other factors, such as disturbance, that habitat is protected to the same level as any habitat supporting endangered or threatened species.

Response to Comment J-17. The 5 areas shown in black on Figure 3-17 are former disposal ponds that were inactive when the MOU between the Navy and the US Fish and Wildlife Service was signed. It was agreed in the MOU that these nontidal areas would not be used for dredge material disposal but would be maintained as permanent habitat for the salt marsh harvest mouse. The MOU described this action as setting aside former, inactive dredge disposal ponds, representing 219 acres and containing 180 acres of existing nontidal wetland habitat to be maintained as permanent habitat for the salt marsh harvest mouse. All 5 of these disposal ponds either revert to the state or are being transferred to the USFWS.

Response to Comment J-18. The reuse areas identified in the comment are separated from dredge pond areas by roadways or by topography and land use. Areas 1, 2, 6, and 8 are developed areas, as opposed to the undeveloped wetland/dredge pond area. Areas 11 and 12, while minimally developed, are separated from the nearby dredge ponds/wetlands by topography. Proposed uses of these areas are compatible, given their district development patterns, topography, and land uses.

Response to Comment J-19. The Environmental Concerns subsection in the EIS/EIR in which the reference discussion appeared, has been deleted from the existing conditions section of the document. Potential impacts of dredge pond reuse are discussed in the EIS/EIR revised Section 5.5, Cumulative Impacts.

Response to Comment J-20. In order to assume the compatibility of continued off-loading and pumping of dredged material with proposed reuses of Areas 10, 5, 4, and 3, the following impact and mitigation have been added to EIS/EIR Section 4.1.2. The reuse proposed for Reuse Area 12 (Regional Park) would not conflict with the continued off-loading and pumping of dredged material unless the open space use required removal of the pipeline.

> "*Impact 4.* A significant and mitigable impact would result from the redevelopment interfering with or removing dredge slurry pipelines. Redevelopment in various reuse areas could interfere with or require the removal of dredge slurry pipelines. Introducing structures or infrastructure in Reuse Areas 3, 4, 5, and 10 could interfere with existing infrastructure that transports dredge slurry through these areas. In addition, open space uses in Reuse Area 12 could require removing or relocating dredge slurry pipelines.
>
> *Mitigation 4.* Design all development plans for Reuse Areas 3, 4, 5, 10, and 12 to allow continued transfer of dredged material to dredge disposal areas, unless use of the dredge disposal areas is terminated. Implementing this mitigation would reduce the impact to a nonsignificant level."

Response to Comment J-21. The referenced typo has been removed during the process of revising and updating this section.

Response to Comment J-22. The McAteer-Petris Act includes numerous policies promoting the protection of bay waters, wetlands, and species. Policies that have been incorporated into BCDC's Bay Plan, include the following:

- Maintain marshes and mudflats to the fullest possible extent to conserve fish and wildlife and to abate air and water pollution. Filling and diking should be allowed only for purposes providing substantial public benefits and only if there is no reasonable alternative.

- To insure the benefits of fish and wildlife for present and future generations of Californians, to the greatest extent feasible, the remaining marshes and mudflats around the bay, the remaining water volume and surface area of the bay, and adequate freshwater inflow into the bay should be maintained.

- Specific habitats needed to prevent the extinction of any species or to maintain or increase any species that would provide substantial public benefits, should be protected, whether in the bay or on the shoreline behind dikes.

The loss of habitat and potential impacts on sensitive species noted in the comment would be compatible with these policies only if substantial public benefits are provided by the action and if reasonable alternatives do not exist. Alternative uses of these areas may exist; however, it should be noted that there is a potential conflict between species and habitat protection policies of the Bay Plan and port priority designations for the dredge disposal ponds under that plan. However, this inconsistency would only affect cumulative development, as these ponds are not on surplus lands considered for community reuse but on state reversionary land. Under the revised Bay and Seaport Plans, habitat described in item 3 of the comment (reuse of area 10) could be inconsistent with the Bay Plan policies. Item 4 no longer applies because, on further review, it has been determined that the dry docks would not result in a significant impact to endangered and threatened fish (see response to comment D-11 for more information). Item 1 of the comment (southern crossing) would not be consistent with Bay Plan policies unless the previously discussed public benefits and alternatives considerations are determined to be met. This determination would need to be made by the BCDC, based on information provided in this document and other relevant available information on feasibility

of alternatives and public benefits. Item 2 (increased marina vessel traffic) no longer applies to the Reuse Plan Alternative evaluated in the EIS/EIR. Development of the marina in Reuse Area 10 is no longer proposed because the area will be transferred to the US Army for development of a reserve center. The Vallejo City Council revised the Mare Island Final Reuse Plan on March 10, 1998 to reflect the Federal to Federal transfer of property to the US Army. Impacts to Mason's lilaeopsis from US Army vessels using the piers are discussed in Section 5.5 Cumulative Impacts.

Response to Comment J-23. Development of a marina is no longer proposed as part of the Reuse Plan Alternative. The area proposed for the marina will be transferred to the US Army for development of its reserve center.

Response to Comment J-24. A detailed alternatives/feasibility study for the southern crossing has not been prepared. The southern crossing would be required to provide adequate vehicular circulation under the Reuse Plan Alternative. Use of expanded ferry or bus service would not sufficiently reduce private vehicle use demand to eliminate the need for a southern crossing under the Reuse Plan Alternative. A reduction in buildout density, as proposed in the Medium Density Alternative and Open Space Alternative, would sufficiently reduce vehicular traffic to eliminate the need for the southern crossing.

Response to Comment J-25. The Natural Resources Management Plan was completed in 1989. A citation for the plan (US Navy 1989) has been added to the methodology subsection of Section 3.6. This source is included in the reference list in Chapter 7. A copy of the Natural Resources Management Plan is available through EFA West.

Response to Comment J-26. The reuse plan identifies a number of scenarios that would involve differing amounts of dredging. These uses are identified at a general conceptual level of detail in the reuse plan and are discussed at a programmatic level of detail in the EIS/EIR. The type and amount of dredging required under these generalized scenarios is not known and is not analyzed. When specific plans are proposed, detailed environmental analysis would be required.

Response to Comment J-27. EIS/EIR Section 3.7.5, third paragraph under Berthfront Dredging, has been modified to address the comment as follows: the first 4 sentences of the paragraph have been deleted because the Navy no longer dredges at Mare Island. In addition, the following sentence has been added as the second sentence of the paragraph:

> "The Navy obtained an extension of its previous 5-year permit No. 17641E24, but the extension expired on May 1, 1996, and has not been renewed."

EIS/EIR Section 4.7, sixth paragraph, second and third sentences, have been revised as follows:

> "Vallejo would need to be permitted by the COE and BCDC to continue berthfront dredging. Upland dredge disposal sites are subject to permit from the RWQCB and possibly BCDC if disposal were on lands within BCDC's jurisdiction."

Response to Comment J-28. EIS/EIR Section 3.7.5, sixth paragraph under Channel Dredging, second sentence, has been revised as follows:

> "Although the capacity of Disposal Site No. 9 is large, it is a policy of the San Francisco Regional Water Quality Control Board (RWQCB), expressed in the Basin Plan, and of BCDC in the Bay Plan, to encourage alternatives to dredge material disposal in the San Francisco Bay estuary."

EIS/EIR Section 3.7.6, fourth paragraph under Dredging Regulations, fourth sentence, has been revised as follows:

> "In addition, it is the policy of both BCDC and the San Francisco RWQCB to encourage alternatives to disposal of dredge material in the San Francisco Bay estuary (Bay Plan, Dredging Policies No. 2, 4, and 5; Basin Plan Resolution A9-130, 1991)."

Response to Comment J-29. EIS/EIR Section 4.7 under Dredging Options, second bullet, last sentence, has been revised as follows:

> "Implementing this request would be subject to economic review by the COE and would need to be consistent with BCDC's Seaport Plan."

Response to Comment J-30. Because the proposed action is disposal and reuse of surplus land and because the dredge disposal ponds are almost entirely on state reversionary land, discussion of dredge pond impacts is moved to Section 5.5, Cumulative Impacts. The impact in question refers to the accelerated rate of filling the dredge ponds due to a greater rate of dredge material generation associated with deeper dredging. This impact would not be entirely mitigated by placing the dredge material in 4-foot lifts because, even if the dredge ponds are operated in the most efficient manner, the impact of accelerated fill of pond storage areas for dredged material would still occur.

Response to Comment J-31. The comment has been addressed in Section 5.5, Cumulative Impacts, under Water Resources, with the following new language:

> "Studies prepared in the development of an LTMS for dredge disposal in the San Francisco Bay Area suggest that operating the dredge material disposal ponds at Mare Island as a regional dredge material rehandling facility could accommodate an average of 1.1 million cubic yards annually. If operated as a disposal facility, LTMS studies suggest that the facility could permanently accommodate up to 15.5 million cubic yards, or 5 percent of the regional disposal requirement over the next 50 years."

Response to Comment J-32. As discussed in EIS/EIR Section 4.7, Mitigation 2a, "rights-of-way for levees protecting inland areas from tidal flooding should be sufficiently wide on the upland side to allow for future levee widening to support additional height so that no fill for levee widening is placed in the bay." Therefore, no bay fill should be required for levee improvements and maintenance. The extent of levee improvements is not known at this time. As noted in Mitigation 2, raising the base level of the upland portion of the site is an alternative to levee improvements. As suggested in the comment, less dense development that permits further setbacks from flood-prone areas also would reduce the need for levee improvement. It should be noted that this mitigation in the EIS/EIR referred to actions that would occur on land being transferred to USFWS, and as such, would be a cumulative impact rather than an impact of the proposed action.

Response to Comment J-33. Specific runoff reduction measures, such as those identified in the comment, would be part of the best management practices (BMPs) required in EIS/EIR Section 4.7, Mitigation 1, to prevent and control stormwater runoff. Specific stormwater improvements would be proposed and reviewed during the implementation of specific development plans. As noted in that response, nonstructural BMPs, such as those suggested by the commenter, should be given preference over structural BMPs. As part of the BMPs, parking areas should be constructed with turf blocks or other permeable materials to reduce runoff. The BMPs also should include minimizing land used for parking areas and the use of multilevel parking structures in place of large surface parking lots wherever possible. Excess existing parking areas not proposed for development should be landscaped. The stormwater CIP does not envision any new stormwater retention ponds.

The existing NPDES and SWPPP permits for the base are available for review on request from the Navy's EFA West office in San Bruno.

Response to Comment J-34. It is unlikely that bay fill would be necessary to improve the on-ramps to Mare Island; however, this was not a focus of the EIS/EIR analysis, and prior to granting permit approvals to alter the on-ramps, improvements to the ramps (as well as other roadway improvements) would be the subject of subsequent environmental analysis.

Response to Comment J-35. The quantity and type of fill associated with the proposed southern crossing is unknown at this program level of development, and therefore consistency with applicable regulations cannot yet be determined. The southern crossing may be inconsistent with Bay Plan transportation policies; however, a determination of McAteer/Petris Act/Bay Plan consistency is not possible until a specific location for the southern crossing has been developed. Such a determination will be required prior to any approved of a specific southern crossing proposal. Assembly Bill 719 limits expansion of SR 37 to 4 lanes between the east side of the Napa River Bridge to Diablo Street east of SR 29, primarily due to environmental constraints.

Response to Comment J-36. The reduced intensity reuse alternatives, the Medium Density Alternative and the Open Space Alternative, accomplish the goal requested in the comment of eliminating the southern crossing bridge across Mare Island Strait. If the need for the southern crossing was established, based on the development of Mare Island, a detailed study would be needed that would consider all of the viable alternatives, including why a tunnel would or would not be feasible.

Response to Comment J-37. The proposed southern crossing bridge would be located in areas that are currently designated as port, water-related industry, and park priority. The crossing would facilitate vehicular transportation access to port and industrial uses, and thereby could provide benefits and land use compatibilities with these uses sufficient to be consistent with Bay Plan policies regarding those uses. Should part of the southern crossing be constructed in a park-priority area, it would not be consistent with that land use. In addition, if the crossing were to impede vessel access to port-designated areas, the crossing also would not be consistent with the Bay Plan.

Response to Comment J-38. The reuse plan is a general planning document from which more specific plans will be developed. It provides general land use parameters and policies that establish the overall planning context for future development on Mare Island. It is acknowledged that the availability of certain parcels will depend on the status of remediation and that public access would not be allowed into areas until they were determined to be safe. At this time such a determination would be speculative since remediation activities have not yet been completed. Currently, public access is proposed throughout the shoreline areas of Mare Island and within the regional park area. The precise public demand associated with the proposed land uses cannot be determined at this time in the absence of specific development proposals.

Response to Comment J-39. The comment that development of a waterfront promenade in Reuse Areas 3, 4, 5, and 10 will need to be consistent with BCDC's public access policies is noted. Consistency of the proposed public access in Reuse Areas 4 and 5 would depend on the ultimate uses for these areas. Consistency would be determined during the specific plan or project-specific phase of development.

Response to Comment J-40. Since circulation of the Draft EIS/EIR, conservation easements have been established on Mare Island for the protection of sensitive biological resources. The impacts identified in the EIS/EIR for Reuse Areas 1 and 12 have been mitigated by the establishment of these conservation easements (see EIS/EIR Section 4.6). In addition to the easements, many existing roads and trails are available in the areas near Reuse Areas 1 and 12. Reuse Area 13 is located on state reversionary land,

and future use of this land would be under the purview of the State Lands Commission. Impacts to the state reversionary lands are discussed as cumulative impacts in EIS/EIR Section 5.5.

Response to Comment J-41. Since circulation of the Draft EIS/EIR, conservation easements have been established in several areas of Mare Island for the protection of sensitive biological resources. It is anticipated that any future use in these areas would be monitored by the USFWS. Public access may still be allowed in these areas, but under certain restrictions imposed by USFWS. The reuse plan does not provide the level of detail requested by the commenter regarding specific locations of public access areas. Vallejo will be developing more specific area plans that will provide this level of detail.

Response to Comment J-42. It is anticipated that the proposed promenade along portions of the waterfront, as well as other appropriate pathways and trails, would be integrated with the overall Bay Trail system. Specific planning for incorporation has not yet occurred. The specific design and amount of public access along the Mare Island waterfront would depend on the final land uses along waterfront areas.

Response to Comment J-43. As noted in the response to comment J-22, increased vessel traffic would not be consistent with Bay Plan policies unless public benefits and alternatives considerations are determined to be met. The area formerly proposed as a marina will be transferred to the US Army for use as a reserve center.

Response to Comment J-44. Comment noted. It is anticipated that BCDC will be involved in evaluating and commenting on the future detailed development studies and environmental impact analyses at Mare Island.

Letter K

STATE OF CALIFORNIA PETE WILSON, Governor

SAN FRANCISCO BAY CONSERVATION AND DEVELOPMENT COMMISSION
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November 6, 1995

Mr. John Kennedy
United States Department of the Navy
Engineering Field Activity, West
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, California 9066-5006

SUBJECT: Pending Consistency Determination for the Disposal and Reuse of Federal Surplus Land at Mare Island Naval Shipyard

Dear Mr. Kennedy:

I enjoyed our telephone conversation the other day and very much appreciate the excellent cooperation we have received from the Navy in trying to reach consensus on the eventual disposal and reuse of Mare Island Naval Shipyard. We understand fully the desire by the Navy and the City of Vallejo to expedite the disposal and reuse of this facility.

As we discussed, the San Francisco Bay Plan and San Francisco Bay Area Seaport Plan now designate Mare Island as a port and water-related industrial priority use area. Many of the uses proposed for Mare Island in the Reuse Plan prepared by the City would be inconsistent with this priority use designation. Thus, we would be forced to object at this time to any consistency determination for the disposal and reuse of the Shipyard for the purposes specified in the Reuse Plan.

However, we have been working with the City, the Metropolitan Transportation Commission, the many public and private ports in the region, and other governmental agencies to update on a regional basis the Seaport Plan and Bay Plan policies on ports. This update, unfortunately, has been delayed for funding and administrative reasons and is about a year behind schedule. We have completed our basic staff analysis on the need to retain Mare Island for port and water-related purposes and have preliminarily determined that the City's Reuse Plan would accommodate the Commission's interests in retaining several areas of Mare Island for port, water-related industrial and dredged material disposal purposes. Therefore, once the Seaport Plan and Bay Plan updates are adopted by the Commission, we believe we would could concur with a Navy consistency determination for the disposal and reuse of the Shipyard.

For this reason, we fully support the idea of the Navy completing the Environmental Impact Statement/Environmental Impact Report (EIS/EIR) on the disposal and reuse of the Shipyard while we are completing the Seaport Plan and Bay Plan updates. In keeping with this approach, we do not object to the submittal of the consistency determination for the disposal and reuse of the Shipyard after the Record of Decision on the EIS/EIR has been issued. We respectfully request that the Navy delay submitting its consistency determination until the Commission has had the chance to revise its federally-approved management program in a manner which will allow it to concur with the Navy's proposed action. K-1

We would also like to express our appreciation to the Navy for providing us with a draft of a consistency determination for our preliminary comments. We believe that this will help us to expedite our processing of the consistency determination when it is formally submitted and will help to ensure that any issues can be resolved before the consistency determination reaches the Commission. We will be providing comments to you on the draft consistency determination shortly.

Very truly yours,

WILL TRAVIS
Executive Director

WT/SAM/mm

Response to Comments

Response to Comment K-1. The comment supporting the completion of the EIS/EIR concurrent to the update of the Seaport Plan and Bay Plan is noted. In compliance with the Coastal Zone Management Act (CZMA) of 1972, 16 U.S.C. § 3501 et seq., coastal consistency documentation was submitted by the Navy to BCDC on May 19, 1997 for the disposal of the former Mare Island Naval Shipyard. The documentation supported the Navy determination that the disposal of the shipyard would be an administrative title transfer action having no effect on the adjacent coastal zone. On August 1, 1997 BCDC issued a Letter of Agreement, concurring with the Navy's consistency documentation.

Letter L

STATE OF CALIFORNIA
PETE WILSON, Governor
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION
2101 WEBSTER STREET, SUITE 500
OAKLAND, CA 94612
Phone: (510) 286-1255
FAX: (510) 286-1380

Ann Merideth, Director
City of Vallejo
Development Services Department
555 Santa Clara Street
Vallejo, CA 94590

November 3, 1995
File No. 1535.05

RE: Draft Environmental Impact Statement and Environmental Impact Report, Disposal and Reuse of Mare Island Naval Shipyard, Vallejo, California, Solano County

Dear Ms. Merideth:

Staff of the Regional Board has reviewed the above DEIR for the Closure of the Mare Island navy base and have the following comments. In general, we feel that the DEIR adequately addresses major water quality issues. As described in the EIR, the Regional Board, along with other State and Federal agencies are involved in reviewing work conducted at Mare Island under the Navy's toxic substances investigation and remediation program (Defense Installation Restoration Program). In the coming years, we expect to remain involved in the Navy's environmental restoration work, especially those elements which pertain to the investigation of storm drains, shoreline sediments, hazardous waste landfills and contaminated ground water. L-1 L-2

Additionally, staff of the Regional Board have been involved in a planning effort for dredging dredged material disposal, called the Long Term Management Strategy (LTMS), which was intended to develop a long term plan for disposal of dredged material in the San Francisco Bay estuary. LTMS has undertaken dozens of studies, primarily funded by the Corps of Engineers, to examine dredging-related problems and solutions. The need for a large-scale sediment re-handling (primarily drying and transport) facility was identified early on by several LTMS committees. The Mare Island dredge ponds could fulfill this need. Hence, as a lead member of the LTMS, the Regional Board would likely support the development a regional upland re-handling site for dredged sediment on the Mare Island site, so long as that use is in accordance with on-going base closure and cleanup requirements. We encourage the State Lands Commission and City of Vallejo to coordinate future pond development with the LTMS lead agencies. L-3

General Comments Regarding Wetlands

Wetlands enhance water quality through such natural functions as flood and erosion control, stream bank stabilization, and filtration and purification of contaminants. Wetlands also provide critical habitats for hundreds of species of fish, birds, and other wildlife, offer open space, and provide many recreational opportunities. Water quality impacts occur in wetlands from construction of structures in waterways, dredging, filling, and altering drainage to wetlands.

The Regional Board must certify that any permit issued by the U.S. Army Corps of Engineers complies with state water quality standards, or it must waive such certification. Clean Water Act section 401 water quality certification is necessary for all 404 Nationwide permits, reporting and non-reporting, as well as individual permits. L-4

All projects must be evaluated for the presence of jurisdictional wetlands. Destruction or impact to wetlands should be avoided. 401 Certification may be denied based on significant adverse impacts to "Waters of the State." The goals of the California Wetlands Conservation Policy include ensuring "no overall net loss and achieving a long-term net gain in the quantity, quality, and permanence of wetlands acreage and values." In the event wetland loss is unavoidable, mitigation will be preferably in-kind and on-site with no net destruction of habitat value. Mitigation will preferably be completed prior to, or at least simultaneous to, the filling or other loss of existing wetlands. Successful mitigation projects are complex tasks and difficult to achieve. This issue will be strongly considered during agency review of any proposed wetland fill. Wetland features or ponds created as mitigation for the loss of existing "jurisdictional wetlands" or "waters of the United States" cannot be used as storm water treatment controls.

Specific Comments

As noted, on page 4-67 of the DEIR, the LTMS evaluated the Mare Island dredge ponds for use as a regional sediment rehandling facility. LTMS ranked potential upland sites for upland rehandling and disposal. Of the 80 sites considered, the Mare Island dredge ponds were ranked among the top sites (*Reuse/Upland Site Ranking, Analysis and Documentation, Work Element E. Resuse/Upland Site Analysis and Documentation* Volume I, *draft*, USACOE, by Gahagan and Bryant Assoc. December 1994). Following the ranking exercise, LTMS conducted a preliminary engineering reconnaissance study on the ponds (*ibid*, Volume II). This particular study examined the Mare Island ponds as "multi-user" upland dredged material reuse site and found that the Mare Island ponds, in some configurations, were highly feasible. Note that LTMS is a multi-agency cooperative effort and not an independent agency with its own funding stream and authorities, etc. Therefore, the statement in the DEIR (page 4-67, second paragraph) that states "...under the LTMS process, a detailed evaluation of Mare Island would be prepared and submitted for public comment as an Environmental Impact Statement" is misleading. Additionally, the Mare Island ponds were never "dropped....as a candidate" from the LTMS process. A markup of this text is attached. L-5

Thank you for considering these comments. You may contact me at (510)286-0841, if you have questions or if we can be of further service to the lead agencies.

Thomas Gandesbery
Environmental Specialist

attachment.

[enclosure]

bcc: Gina Kathuria

cc: Department of the Navy
US Navy, Engineering Field Activity West
900 Commodore Drive
San Bruno, CA 94066-5006
Att: Jerry Hemstock, Code 185JH

Steve Goldbeck, BCDC
Mary Howe, State Lands Commission

:mareis

ER 0-94-3-67

Volume I: Reuse/Upland Site Ranking, Analysis and Documentation

Long-Term Management Strategy

Work Element 2, Reuse/Upland Site Analysis and Documentation

DRAFT

Submitted to:

U.S. Army Corps of Engineers
San Francisco District
211 Main Street
San Francisco, California 94105-1905

Prepared by:

[redacted]
33 Commercial Boulevard
Novato, California 94949

In Association with:

[redacted]

In Collaboration with:

San Francisco Bay Conservation and Development Commission
30 Van Ness Avenue, Suite 2011
San Francisco, California 94102

December 1994

Letter L

PHYLLIS: ATTACHMENT TO WATER BOARD LETTER

on the San Francisco Bay while allowing for continued growth of port facilities. The principal issues relate to disposal of the dredge material. Ocean, Bay, and upland disposal options have been studied, but much of the effort has been devoted to evaluating upland disposal sites. The EPA, COE, BCDC, and San Francisco RWQCB, as well as numerous other agencies and the public, are involved in the planning effort. As an existing facility with a capacity for handling a relatively large volume of dredge material, Mare Island represents a potentially valuable regional asset.

Engineering feasibility

~~Primarily for identification of dredge disposal,~~ the LTMS task force considered, ~~and then dropped~~ Mare Island as a candidate for a regional upland disposal site because of its status as a Navy installation. Base disposal and reuse has made Mare Island a much more attractive candidate for consideration in an upland disposal program. Under the LTMS process, a ~~draft~~ evaluation of Mare Island ~~will be~~ prepared, ~~and submitted for public comment in the~~ ~~form of~~ an Environmental Impact Statement.

(has been)

The overall management has been principal focus of the LTMS task force agencies.

Congressional authorization and funding for dredging the "Navy Channel" in the Mare Island Strait to a depth of 36-feet will probably be rescinded at the end of 1996, when it is no longer needed by the Navy. The Corps of Engineers would consider maintenance dredging requests to support general navigation. It is probable that existing users of the Napa River above the Causeway Bridge would request that a channel be maintained through the Mare Island Strait at a minimum depth of -15 feet MLLW. It is not known how often, or whether, any dredging of the Mare Island Strait would be needed to maintain this depth. The reuse plan does not identify or specify the needs of future shipping tenants at Mare Island.

A number of permit issues would need to be resolved before Vallejo could perform berthfront dredging or dispose of sediment in the dredge ponds. Vallejo would need to be permitted by the Corps of Engineers to continue berthfront dredging and to dispose of the dredge material at the disposal ponds on the island. Use of disposal ponds on state reversionary land would fall under the jurisdiction of the State Lands Commission or their designee. It may be possible to transfer the Navy's permit to Vallejo or to another operator, but this has not yet been determined. An NPDES permit would be required from the San Francisco RWQCB for discharge of water to the marsh or estuary. The San Francisco RWQCB also may require the operator to conduct more stringent water quality testing than is currently in effect for the Navy. The U.S. Fish and Wildlife Service would probably seek an agreement from the new operator, similar to or more comprehensive than that the MOU with the shipyard, to protect salt water harvest mouse habitat.

Letter L

on the San Francisco Bay while allowing for continued growth of port facilities. The principal issues relate to disposal of the dredge material. Ocean, Bay, and upland disposal options have been studied, but much of the effort has been devoted to evaluating upland disposal sites. The EPA, COE, BCDC, and San Francisco RWQCB, as well as numerous other agencies and the public, are involved in the planning effort. As an existing facility with a capacity for handling a relatively large volume of dredge material, Mare Island represents a potentially valuable regional asset.

~~Prior to its identification as a candidate disposal site,~~ the LTMS task force considered, ~~and then dropped~~ Mare Island as a candidate for a regional upland disposal site ~~because of its status as a Navy installation~~. Base disposal and reuse has made Mare Island a much more attractive candidate for consideration in an upland disposal ~~program~~. Under the LTMS process, a ~~detailed~~ evaluation of Mare Island ~~will be~~ prepared, ~~and submitted for public comment in the form of~~ an Environmental Impact Statement.

Congressional authorization and funding for dredging the "Navy Channel" in the Mare Island Strait to a depth of 36-feet will probably be rescinded at the end of 1996, when it is no longer needed by the Navy. The Corps of Engineers would consider maintenance dredging requests to support general navigation. It is probable that existing users of the Napa River above the Causeway Bridge would request that a channel be maintained through the Mare Island Strait at a minimum depth of -15 feet MLLW. It is not known how often, or whether, any dredging of the Mare Island Strait would be needed to maintain this depth. The reuse plan does not identify or specify the needs of future shipping tenants at Mare Island.

A number of permit issues would need to be resolved before Vallejo could perform berthfront dredging or dispose of sediment in the dredge ponds. Vallejo would need to be permitted by the Corps of Engineers to continue berthfront dredging and to dispose of the dredge material at the disposal ponds on the island. Use of disposal ponds on state reversionary land would fall under the jurisdiction of the State Lands Commission or their designee. It may be possible to transfer the Navy's permit to Vallejo or to another operator, but this has not yet been determined. An NPDES permit would be required from the San Francisco RWQCB for discharge of water to the marsh or estuary. The San Francisco RWQCB also may require the operator to conduct more stringent water quality testing than is currently in effect for the Navy. The U.S. Fish and Wildlife Service would probably seek an agreement from the new operator, similar to or more comprehensive than that the MOU with the shipyard, to protect salt water harvest mouse habitat.

Response to Comments

Response to Comment L-1. Comment noted.

Response to Comment L-2. It is noted that the RWQCB will continue to be involved in the Navy's environmental restoration work.

Response to Comment L-3. The support of the RWQCB for the development of a regional upland re-handling site for dredged sediment on Mare Island is noted. The recommendation that the State Lands Commission and Vallejo coordinate future pond development with the LTMS lead agencies also is noted.

Response to Comment L-4. The general comments regarding wetlands and the evaluation process are noted.

Response to Comment L-5. The discussion of the LTMS in EIS/EIR Section 4.7, fourth paragraph, has been revised, as requested by the RWQCB, and now reads as follows:

> "Dredging in the San Francisco Bay estuary is the subject of a cooperative regional planning effort being conducted by a number of Federal and state agencies. A long-term management strategy (LTMS) for dredging and dredge material disposal from the San Francisco Bay region is in the final stages of preparation. The focus of the LTMS is on reducing the impacts of dredging and dredge material disposal on San Francisco Bay while allowing for continued growth of port facilities. The principal issues relate to disposing the dredge material. Ocean, bay, and upland disposal options have been studied, but much of the effort has been devoted to evaluating upland disposal sites. The EPA, COE, BCDC, and San Francisco RWQCB, as well as numerous other agencies and the public, are involved in the planning effort. Dredging and dredge material disposal associated with reuse of Mare Island would be affected by the final LTMS. The relationship of the LTMS to dredge disposal ponds on the island are addressed in Chapter 5, Cumulative Impacts; dredging issues relating to reuse options along Mare Island Strait are addressed in this section."

Parent
Child
Teacher
The heart of the learning process

Vallejo City Unified School District

October 30, 1995

Commander
Western Division, Naval Facilities Engineering Command
Attn: Mr. Jerry Hemstock, Code 09F2JH
900 Commodore Drive
San Bruno, CA 94066-2402

Ms. Ann Meridith
Planning Director
City of Vallejo
555 Santa Clara St.
Vallejo CA 94589

Dear Mr. Hemstock and Ms. Meridith:

The Vallejo City Unified School District (VCUSD) has reviewed the Draft Environmental Impact Statement/Environmental Impact Report for the Mare Island Naval Shipyard Disposal and Reuse, and offers the following comments. The comments are applicable to the Proposed Use and Medium Density Alternatives.

ITEM 2.4.1 Reuse Area 6

The VCUSD has submitted an application to the U.S. Department of Education requesting that the Mare Island Elementary School be assigned to the VCUSD. The U.S. Department of Education has in turn requested that the Navy transfer the school to the U.S. Department of Education, and the U.S. Department of Education will then transfer the school the VCUSD. The Navy has not yet responded to the U.S. Department of Education's request. M-1

The District is also working with the City of Vallejo to have the school transferred to the District through the City's reuse plan.

ITEM 2.4.2 Transportation Improvements

Pedestrian and bike paths should connect the elementary school and the housing areas. M-2

ITEM 3.2.1 Regional Economy

The discussion of employment in the regional economy does not mention if the employment projections are prepared based on the re-use of Mare Island. M-3

ITEM 3.2.2 Population and Housing

The text preceding Table 3-7 states the table "...presents Vallejo's 1990 and 1994 housing supply." The table, however, is labeled "1994 Housing Unit Totals in the ROI." (Region of Influence). The ROI consists of Napa and Solano County not Vallejo alone. The housing unit totals for the City of Vallejo needs to be presented. M-4

ITEM 3.2.3 Schools

The average class sizes cited in the EIR/EIS are the District's staffing ratios not the average class size. The staffing standards are used in calculating the capacity of the schools. Special Day Classes have lower class sizes that are established by State law. M-5

When applying for state school facilities funding, the state's standards for the number of students per classroom and the use of classrooms must be used. The state's standards generally calculate the capacity of each District school at a greater number of students than the District's standards. The state's higher student capacity delays state school construction funding until the state's standards are met (when state construction funds are available). District schools must therefore operate at a capacity in excess of District standards before state funding is received. In order to operate the District's schools based on District educational standards, local funding of school facilities is necessary. M-6

Table 3-9 requires additional explanation. The number of students in temporary classrooms does not account for the necessary support programs, such as reading, speech and resource specialists, that are housed in temporary spaces. If these support programs were to be removed from the temporary spaces and relocated into permanent school buildings, the number of students that would have to be housed in temporary classrooms would increase. Table 3-9 does not account for the use of temporary spaces for support programs and understates the use of temporary classrooms and the true degree of overcrowding in the District. The District currently uses 180 temporary buildings for classrooms and support programs. The number of students that can be accommodating in these temporary buildings is 2,100. The 2,100 students should be counted as being in "temporary" classrooms. M-7

Many District schools do not have adequate support programs based on the educational program established by the District. Enrollment growth has required the District to use facilities that would otherwise be used for support programs as classrooms. The capacity listed for the schools is based on the current use of classrooms at each school not on the capacity of the schools if the necessary support services were provided at each school. M-8

District policy is to operate schools on a traditional or single track year round calendar. Multi-track year round calendars are to be used only in the case of overcrowding. The District operates eight elementary schools on a multi-track year round calendar due to overcrowding. The year round calendar at the eight schools provides 1,644 in additional capacity . The students housed in the capacity created by the use of a multi-track year round calendar should also be counted as being housed in "temporary" classrooms. M-9

ITEM 3.9.4 Transit System-Vallejo

Public bus routes should include service to the elementary school and the other educational services being proposed. M-10

ITEM 4.1 Land Use

The Education Element of the City of Vallejo's General Plan requires that the student impact of a project on the District's school facilities be mitigated. All rezonings are subject to the terms of the Educational Element. The Educational Element states, in part:

> "The Developer shall obtain written certification from the District (or show cause why the mitigation proposed by the District should not be required) that the Developer has mitigated the school-related impacts of this project satisfactory to the District. The methods include, but are not limited to, those methods set forth in the Government Code. This condition shall not be construed as a limitation on the District's choice of legal mitigation alternatives." M-11

Property adjacent to the Mare Island Elementary School and along the path of travel from the existing and planned residential development on Mare Island and the elementary school needs to have land use designations that are consistent with the health and safety needs of the children attending the school and walking/riding to the school. M-12

ITEM 4.2 Socioeconomics.

Enrollment Projections

Table 4.8 cites that 1,500 students will result from the employment created by the reuse of Mare Island. The procedure for calculating this number is described as:"...student enrollment is estimated using 1989 student employee ratio." This is unclear. What data were used in determining the ratio? Why is 1989 used as the year to measure the student-employee ratio? M-13

The District is using current information in projecting enrollments, but Table 4.8 uses 1989 data to project enrollments. Comparing projections based on data six years apart does not allow for an accurate comparison. M-14

The District's enrollment projections are prepared using a number of factors, not just the number of vacant homes and the number of homes anticipated to be built as stated in the EIR/EIS. Historical enrollment trends and birth rate data are also used. Recent enrollment projections have been based on declining enrollment largely due to the loss of jobs associated with the closure of Mare Island and the general downturn of California's economy. As new jobs are created through the reuse of Mare Island, enrollment is projected to increase, and the increase in enrollment will affect the enrollment projections. The current projections used by the district may be underestimating future enrollment due to the recent downturn in the enrollments on which the projected enrollments are partially dependant. M-15

The District's enrollment projections are also based on the limited development of in-fill lots located throughout the city. The demand for housing in Vallejo due to increased job opportunities on Mare Island may increase the pressure to develop more in-fill lots and may also create pressure to increase the density of in-fill lots. The increased development and increased density of development of the in-fill lots will increase the number of students in the District's projected enrollment.

The EIR/EIS bases its projected enrollments on the anticipated number of jobs to be generated on Mare Island. No consideration is given to the enrollment impact of the secondary jobs created by the reuse of Marc Island. On page 3-20 it is estimated that an additional 12,000 jobs will be created by ancillary businesses in the Vallejo-Fairfield-Napa PMSA. A large number of these jobs will be in Vallejo. The student impact of the jobs in ancillary business that will locate in Vallejo needs to be identified and considered in the enrollment projections. M-16

Given the uncertainty of the types of business that will occupy Mare Island and the number of employees the businesses will generate, the number of jobs created by the re-use of Mare Island can surpass the single estimate provided in the EIR/EIS for the Proposed Action. Alternative M-17

employment projections should also be developed that account for the number of jobs to exceed the projected level of employment. M-17

The creation of jobs on Mare Island and in the regional area will increase the demand for housing in Vallejo. The current vacancy rate of 5.3%, while considered to be near the average of 5%, is likely to decrease as the demand for housing in Vallejo is increased by the creation of new jobs on Mare Island and the rest of the region. This will have a direct effect on the District's enrollment. M-18

The EIR/EIS should include the impacts of the increased demand for housing in Vallejo and the effects of the ancillary jobs created in the projection of school enrollments. The District's current enrollment projections do not account for these factors and underestimate the student impact of the reuse of Mare Island. M-19

Impact on Schools

Mare Island School

Mare Island school is currently serving the K-6 students living on Mare Island and overflow students from other district schools. The school has a capacity of 478 students, and a current enrollment of 403 (1995 CBEDS). Of the 403 students, 274 students are from other District schools. These 274 students attend Mare Island Elementary School due to overcrowding in other District schools. The total of 454 K-6 students projected to be generated by the reuse of the Mare Island housing and the development of new homes in the Proposed Action Alternative, combined with the 274 students currently attending the school from other parts of the District, will create an impact at the Mare Island School. M-20

State law allows students to attend school in the District in which their parents work. The large number of jobs projected to be created on Mare Island, and the ancillary jobs created in other parts of Vallejo, will impact the enrollments of District schools, particularly Mare Island Elementary.

Federal Terrace School

The EIR/EIS identifies significant impacts on Federal Terrace Elementary School if the Roosevelt Terrace Housing area is reused. The EIR/EIS states these effects can be mitigated. Current state law and local ordinances allow for the District to assess mitigation at the time of the issuance of a building permit. Mitigation for the effects of the re-use of Roosevelt Terrace needs to be identified and established. M-21

Other District Schools

Employees generated by the reuse of Mare Island will live throughout the Vallejo community in both new homes and in existing homes. The students of these employees will attend various schools throughout the District. The District's schools currently face a backlog of over $103 million in deferred maintenance needs. The students generated from the employees of Mare Island will place additional demands on existing schools throughout the District and increase the amount of deferred maintenance funds needed to keep the schools operational. Mitigation needs to be identified and established for these impacts. M-22

Mitigation

The EIR/EIS states that:" (s)ince the families of the 1,500 students would occupy Valljeo's new...homes, these students are included in the VUSD's long range projections of enrollments" New homes built in the Districts two existing Community Facilities Districts (CFDs) do not fully mitigate the home's impact on the District's facilities. The employees generated by the reuse of Mare Island that will live in these new homes will not fully mitigate their impact on the District through the mitigation fees assessed on new residential development. Additional mitigation must be identified and established to fully mitigate the school facility impacts due to the jobs created by the reuse of Mare Island. M-23

Employees generated by the reuse of Mare Island that will live in existing homes in the District will place an additional cost on the deferred maintenance needs of the District's existing schools. No mitigation is currently provided for the deferred maintenance needs of the existing schools. Mitigation is required for the impact of the employees generated by the reuse of Mare Island that will live in existing homes. M-24

The EIR/EIS mentions special assessments and Mello-Roos districts as possible funding sources for mitigation. Developer fees, general obligation bonds, and any other funding mechanism available to the District by state law or local ordinance should also be mentioned as possible funding sources for mitigation. M-25

Mitigation Monitoring

The City should annually survey businesses on Mare Island to determine the number of students that are from the families of employees on Mare Island. If the number of actual students exceeds the number of students projected under the Proposed Action, additional mitigation should be provided. The mitigation measures established should be designed to allow for the annual adjustment of the mitigation if the actual number of students exceeds the number of students projected in the EIR/EIS. M-26

GENERAL COMMENTS

School Transition

The environmental clean up of parcels is required before the ownership of parcels can be transferred. Necessary public services such as schools should be given priority for environmental clean up and transfer.

Currently the Mare Island Elementary School is classified as a priority 6 for environmental clean up. The school should be given a priority ranking of 1 in order to have the school site cleaned up and transferred to the VCUSD. State law also governs the acquisition of school sites by the District. All applicable federal and state criteria must be met before the District will accept title to the Mare Island Elementary School. M-27

School Mitigation

State law permits school districts to assess a school mitigation fee on commercial and industrial development provided certain conditions are met. State law and City of Vallejo ordinances also allow the collection of school mitigation fees on residential development. M-28

The maximum fees allowed by state law and local ordinances will be assessed on all projects subject to the fee.

As a condition of land use entitlement, specific school mitigation will be established. Mitigation measures can include, but are not limited to, the payment of an impact fee or the creation of, or annexation to, a community facilities district. M-29

We look forward to your responses and to working with you to ensure that the necessary school mitigation is provided.

Sincerely,

Ethan Browning Jr.
Director of School Facilities

Response to Comments

Response to Comment M-1. The U.S. Department of Education has approved the VUSD application. The text in Section 2.3.1 under Reuse Area 6 has been revised to state:

> "The Vallejo Unified School District (VUSD) would control and continue to operate the elementary school and adjacent playgrounds."

Response to Comment M-2. The comment that pedestrian and bike paths should connect the elementary school and the housing areas is noted. This concept will be taken into consideration by the LRA during project planning for Mare Island.

Response to Comment M-3. Regional Economy. The following text has been added to EIS/EIR Section 3.2.2, sixth paragraph, second sentence, clarifying the basis of the regional economy employment projections:

> "These projections assume a certain level of reuse of Mare Island through 2010 and do not incorporate the level of reuse projected in Section 4.2 by year 2020."

Response to Comment M-4. The text preceding Table 3-8, formerly Table 3-7, is correct. Table 3-8 shows the housing unit totals for Vallejo. The table has been retitled "1994 Housing Unit Totals in Vallejo."

Response to Comment M-5. The text has been revised to note that average class sizes given are the district's staffing ratios. EIS/EIR Section 3.2.4, first paragraph, second sentence, has been revised to read as follows:

> "Average class sizes for staffing purposes are as follows: kindergarten, 29 students; grades 1 to 6, 30 students; and grades 7 to 12, 25 students. According to the VUSD, all secondary level classes are typically larger than the average class sizes recommended for staffing purposes."

Response to Comment M-6. The following text has been added to the referenced text in EIS/EIR Section 3.2.4, second paragraph:

> "State standards generally calculate the capacity of each district school at a greater number than the district's standards. District schools must therefore operate at a capacity in excess of district standards before state funding is received. To operate the district's schools based on district educational standards, local funding of school facilities is necessary."

Response to Comments M-7 and M-8. The following text has been added as the third and fourth paragraphs in EIS/EIR Section 3.2.4:

> "Table 3-10 presents enrollment versus capacity in Vallejo schools in 1994. According to this data, 1,583 students were taught in temporary classrooms. However, this does not account for the necessary support programs, such as reading, speech, and resource specialists, that are housed in temporary spaces.
>
> If these support programs were to be relocated in permanent rooms, the number of students housed in temporary classrooms would increase. The VUSD uses 180 temporary buildings, which could accommodate 2,100 students, if support programs were relocated. In effect, 2,100 students instead of 1,583 are being housed in temporary classrooms."

Response to Comment M-9. EIS/EIR Section 3.2.4, fifth paragraph, has been revised as follows:

> "In addition, the VUSD policy is to operate schools on a traditional or single-track year-round calendar; multitrack years are to be used only in the case of overcrowding. The district operates 8 elementary schools on a multitrack year-round calendar due to overcrowding. The year- round calendar at the 8 schools provides 1,644 in additional capacity. The students housed in the capacity created by the use of a multi-track year-round calendar should be counted as being housed in temporary classrooms. Total students housed in temporary classrooms would be 3,744 or 20 percent of 1994 enrollment."

Response to Comment M-10. The recommendation that public bus routes include service to the elementary school and other proposed educational services is noted. The elementary school on the island would be expected to serve primarily residents living on the island.

Responses to Comment M-11. As noted in EIS/EIR Section 4.1, the Vallejo General Plan will be amended to incorporate the proposed land uses and establish future development parameters. Any general plan land use element amendment would be required to be consistent with the education facilities element. The subsequent zoning of Mare Island would require consideration of impacts on the student population.

Response to Comment M-12. The land uses proposed in the area adjacent to Mare Island Elementary School are residential and would be consistent with the health and safety needs of children attending the school.

Response to Comment M-13. Text has been added to footnote 3 of Table 4-8 to clarify the source of the employee to student ratio. The ratio (0.47) represents the relationship of the 2,296 students associated with Mare Island in 1989 to the 4,883 Mare Island employees estimated to be living in Vallejo. Employment and school enrollment data in 1989 were used since the shipyard was still fully operational during that year as opposed to more recent years when both Mare Island associated employment and enrollment had dramatically decreased. The ratio applied to projected employee populations means that each employee would generate approximately 0.47 students. This ratio reflects employee populations living in a combination of housing types and is not inconsistent with standard student yield ratios of 0.68 for a single-family home, 0.45 for condominiums, and 0.15 for apartments.

Response to Comment M-14. The 1989 student to employee ratio of 0.47 students per employee generated at Mare Island when the shipyard was operational is a reasonable factor to use for projecting future student generation at Mare Island, as explained above in the response to comment M-13.

Response to Comment M-15. With regard to the district's enrollment projections, text in EIS/EIR Section 4.2.2 under Schools (K-12), Nonsignificant Impacts, has been modified to reflect the commenter's concerns and now reads:

> "The estimated 1,500 students generated by projected employees at Mare Island at buildout of the Reuse Plan Alternative are assumed to live in Vallejo. The current VUSD's long-range plan estimates an increase of 2,100 students from 18,900 students in year 1994 to 21,000 students in year 2001. However, VUSD conducts enrollment projections annually and the 21,000 students projected for 2001 could change between 1995 and 2001."

Response to Comment M-16. The 12,000 secondary jobs occurred when Mare Island was fully operational. SEDCORP estimates secondary job losses in the 4-county area to be in the range of 5,900 to 7,100 jobs, most of which would be lower to middle-income service related jobs based on Bay Area patterns. These estimates are due to closure not reuse of Mare Island. In the EIS/EIR, the impact

analysis does not take into account indirect and induced job impacts because including them would be too speculative, given the uncertainty of the type of industries that would actually locate at Mare Island and the extent that they would procure supplies and services within Vallejo. However, it could be expected that secondary jobs would be filled by employees already residing in the area.

Response to Comment M-17. The projected level of employment given in the EIS/EIR provides a range of jobs (from about 4,804 to 9,669 jobs) rather than the single estimate indicated by the commenter. If the actual number of jobs exceed this projected level, impact on schools would still be constrained by availability of housing in the city. Therefore, suggested mitigation measures in this revised version emphasize city and district cooperation in formulating and implementing specific mitigations, such as tying housing development with school impact assessments or imposing school impact fees on commercial and industrial development. Annual adjustments of mitigations should be discussed between the city and the VUSD.

Response to Comment M-18. The vacancy rate of 5 percent is considered normal in that it allows for turnover of units. The market may tighten up, but the likely impacts would be to drive housing prices up and to induce new construction. The same mitigation measures mentioned above apply to the impact of new home construction.

Response to Comment M-19. To the extent that future Mare Island employment induces infill housing, higher density housing, or doubling up of families, the VUSD's projections would not include students generated from these types of housing. In addition, although the impact analysis did not include indirect and induced employment due to future direct employment at Mare Island because it would be speculative, additional students would be generated from indirect and induced employment. A ratio of 0.19 to every direct job generated has been used in the past by the VUSD.

Although impacts to the school system from students from housing units not included in VUSD's long-range plan and from students generated from indirect and inducted employment could result in overcrowding and could generate additional maintenance demands on existing schools, quantifying this demand would be speculative. In March 1997, Vallejo passed a bond measure allocating $133 million for deferred maintenance. Furthermore, for Mare Island students who would occupy new housing units built in established neighborhoods, the mitigation fee tied to the Community Facilities Districts serving these neighborhoods would not fully mitigate the new homes' impact to the VUSD.

The following text has been added in EIS/EIR Section 4.2.2 under Schools (K-12), Nonsignificant Impacts:

> "VUSD enrollment projections consider the number of vacant homes and residential units that are likely to be built in Vallejo during this period, as well as historical enrollment trends and birth rate data. Correlation of student increases from new Vallejo families with the VUSD projections will depend on the consistency of their housing characteristics with the factors on which the projections were based. Student increases would, however, occur over a 25-year period which should allow ample time for the VUSD to plan adequate service for these students."

Response to Comment M-20. The text has been changed to note that 274 students from other parts of the VUSD are now attending Mare Island Elementary School and that this will have an additional impact.

State law does allow students to attend school in the district in which their parents work. However, the law also allows school districts to turn away students due to over capacity. Thus, although there may

be an impact due to this law, the VUSD board could vote on limiting services to residents to ease overcrowding.

Response to Comment M-21. Identifying and implementing funding of specific mitigation measures would have to be done through the cooperative efforts of the VUSD and Vallejo. While the current school mitigation fee is tied to the issuance of a building permit, future school impact fees do not have to be tied to the issuance of this permit. EIS/EIR Section 4.2.2, Mitigation 1, has been revised to read as follows:

> "Possible mitigation measures to reduce overcrowding include construction of a new school, adding portable classrooms, and busing students to less crowded schools. Implementing these mitigations would reduce the impact to a nonsignificant level."

Response to Comment M-22. On March 4, 1997, Vallejo passed a bond measure allocating $133 million for deferred maintenance of the schools.

Response to Comment M-23. General discussion regarding established CFD's that do not fully mitigate school impact costs, deferred maintenance cost, and additional sources of funding have been added to the text.

Response to Comment M-24. The housing vacancy rate in Vallejo was at 5 percent at the time this study was conducted. The vacancy rate of 5 percent is considered normal in that it allows for turnover of units. This means that existing homes are occupied by families now being served by the school district. Generally, Mare Island employees living in existing homes also are already being served by the school district.

Text has been added to acknowledge the district's deferred maintenance. See the response to comment M-22.

Response to Comment M-25. Identifying specific funding mechanisms for mitigation measures would have to be done through the cooperative efforts of the VUSD and Vallejo. EIS/EIR Section 4.2.2, Mitigation 1, first paragraph has been revised to read as follows:

> "Possible mitigation measures to reduce overcrowding include construction of a new school, adding portable classrooms, and busing students to less crowded schools. Implementing these mitigations would reduce the impact to a nonsignificant level."

Response to Comment M-26. Mitigation monitoring and annual adjustment of mitigation measures are issues that the city and the district should include in their discussion and plans for formulating mitigation measures. The same response applies to the level of fees that should be assessed and the tying of impact fees to land use entitlements. These measures are too specific to include in the EIS/EIR.

Response to Comment M-27. The priority ranking of sites for cleanup has been established by the Navy and is not a subject of discussion within the scope of the EIS/EIR. Concerns about cleanup priority should be addressed directly to the Navy. Please also see responses to comments I-2 and I-4.

Response to Comment M-28. It is acknowledged that state law permits school districts to assess a school mitigation fee on commercial and industrial development, provided certain conditions are met.

Response to Comment M-29. The identification of mitigation measures that can be applied by the school district as a condition of land use entitlement are noted.



1785 Massachusetts Avenue, N.W.
Washington, D.C. 20036
(202) 673-4000 / FAX (202) 673-4038

October 12, 1995

Commanding Officer
Engineering Field Activity West
Naval Facilities Engineering Command
Attn: Mr. Jerry Hemstock (Code 18522)
900 Commodore Drive
San Bruno, CA 94066-5006

Subject: Comments on the Draft Environmental Impact Statement/Environmental Impact Report for the Disposal and Reuse of Mare Island Naval Shipyard, Vallejo, California, dated August 1995. SCH #94093029

The Western Regional Office of the National Trust submits the following comments for inclusion in the Final EIS/EIR. The National Trust for Historic Preservation is a private, non-profit organization chartered by Congress in 1949 with the responsibility of encouraging public participation the preservation of sites, buildings, and objects significant in American history and culture. With the strong support of our members, the National Trust works to protect significant historic site and to advocate historic preservation as a fundamental value in programs and policies at all levels of government. In cooperation with the Department of Defense's Legacy program, the National Trust assists military installations and local preservation groups in developing strategies to further preservation goals.

The National Trust has a number of concerns about the protection offered to historic resources in the EIS/EIR. We are working closely with the involved parties to assist in developing guidelines for protecting this National Historic Landmark. However, we find the draft EIS/EIR to be inadequate and premature in its analysis of the existing conditions because it does not describe the National Historic Landmark district and its significance fully. The explanation of effects of the proposed action on historic buildings is inadequate because it does not address impacts to the integrity and cohesion of a NHL district. The mitigations proposed that are contingent on the parties coming to agreement with the Advisory Council on Historic Preservation are premature because the terms of the Memorandum of Agreement are still in dispute, with no commitment by any of the parties to provide planning for the historic resources. The city of Vallejo is in the process of contracting for a feasibility study for the core area within the NHL. The feasibility of re-use of the buildings proposed for demolition should be taken in to account by the EIS/EIR.

N-1

N-2

N-3

N-4

The mission of the National Trust for Historic Preservation is to foster an appreciation of the diverse [illegible] and meaning of the American cultural heritage and to preserve and revitalize [illegible] our communities [illegible] of this nation. Chartered by Congress [illegible]

The EIS/EIR fails to describe clearly the final recommendations of the Navy's consultant to expand the National Historic Landmark district to include the previously-delineated historic districts, creating one single NHL district covering 1,000 acres of the Island. The EIS/EIR doesn't explain how a National Historic Landmark differs in significance from listing on the National Register of Historic Places. N-5 N-6

The EIS/EIR uses the phrase "historic district" throughout the document to refer to a specific land use concept, which is misleading because it fails to denote that other reuse areas are also National Register Historic districts. Definitions of the following terms should be presented in the Cultural Resources Section, as well as in the Glossary: National Historic Landmark, National Register of Historic Places, and historic districts under the National Register. N-7

Specific comments:

Page 2-14

The fourth paragraph doesn't make sense- is the word All a typo? The concept described for this area is admirable - however, there has been no commitment by either the State Parks system or the National Park Service to provide the presence described, which gives an overly optimistic impression of support from these agencies. Analysis should reflect alternatives for this area if park designation is not possible. N-8

Page 2-16

The relationship of Reuse Area 5 to the National Historic Landmark district should be described here, as well as in the descriptions of all other reuse areas that are within the Landmark district. N-9

It is troubling that the third paragraph here suggests that substandard buildings would be demolished, then in paragraph 4, the buildings are listed for demolition without mentioning that they (Buildings 670, 672, 674, 702 and 738) are contributing members of the National Historic Landmark. No building condition survey is presented to help us determine if the contributing buildings have been determined to be "substandard". The demolition of significant buildings in this area would affect the integrity of the existing National Historic Landmark district. N-10

Page 3-59 and Figure 3-9

The text here and the map should be revised to state that the 1995 Mare Island Historic District is a propose National Historic Landmark district. N-11

Page 4-39

We are concerned that the potential programmatic agreement may not occur as visualized, leaving no other mitigation or protection for the historic resources. Neither the Navy or the city is committed to the protections described in this section. N-12

The impact section does not describe the potential impacts from road widening and other infrastructure improvements to historic structures or sub-surface archaeological impacts. The proposed southern crossing, identified as a future project, has the potential to significantly disrupt N-13

the historic street pattern, historic landscaping and structures, and archaeological resources in the NHL. N-13

The National Trust will continue to work with the Navy and the city of Vallejo, in partnership with the National Park Service, to achieve manageable guidelines for the reuse and protection of Mare Island's Historic Resources. Thank you for providing this opportunity to comment, and we look forward to receiving a copy of the Final EIS/EIR and all notices pertaining to this action.

Sincerely,

Elizabeth Goldstein

Elizabeth Goldstein
Director
Western Regional Office

cc: Dr. Bernard Murphy, Federal Preservation Officer, Department of the Navy
Louis Wall, NAVFAC Western Division
Congressman George Miller
Cherilyn Widell, California State Historic Preservation Officer

Response to Comments

Response to Comment N-1. The text for Section 3.4 has been revised to include a discussion of the NHL; this is discussed in detail in the response to comment C-2.

Response to Comment N-2. Section 3.4 has been revised to include a discussion of the NHL and its relationship to the larger historic district that was nominated to the NRHP. Section 4.4 has been revised to discuss impacts to the general character of the historic district, in addition to impacts to individual buildings or structures. The district-wide impacts are addressed in the MOA, included in Appendix D. A more detailed discussion is offered in the response to comment C-2.

Response to Comment N-3. Section 4.4 has been revised to include a detailed analysis of the MOA, agreed to by the Navy, ACHP, Vallejo, NPS, and SHPO. This is discussed in the responses to comments C-5 and C-6.

Response to Comment N-4. The potential for reuse of historic buildings is addressed in the MOA, included in Appendix D; see the responses to comments C-5 and C-6.

Response to Comments N-5 and N-6. Section 3.4 has been revised to explain the differences between the historic district that has been nominated to the NRHP and the properties that are designated as an NHL. This is explained in the responses to comments C-2 and C-3.

Response to Comment N-7. Section 3.4 has been revised to use the term "historic district" only to refer to the historic district that was nominated to the NRHP.

Response to Comment N-8. The text of this section has been revised to exclude mention of Reuse Area 4 as a potential state or national park. A state or Federal agency has not indicated they would take over the historic district, although presumably they could if funds were available. It is the direction of the Vallejo City Council to have the Mare Island Historic Park Foundation operate the district. This issue is addressed in the response to comment C-4.

Response to Comment N-9. The issue of demolishing buildings at Mare Island is addressed in response to comment C-3. The EIS/EIR provides a programmatic analysis of the impacts of the Reuse Plan Alternative. Section 4.4 has been revised to include more detailed analysis of the general types of impacts likely to occur through the disposal and reuse processes. Because of the general nature of the reuse plan, impacts to individual historic properties are not yet known. Impacts would be more specifically identified during the development of detailed plans.

Response to Comment N-10. The impacts of demolition within the NRHP historic district is addressed in the MOA. See the responses to comments C-3 and N-9.

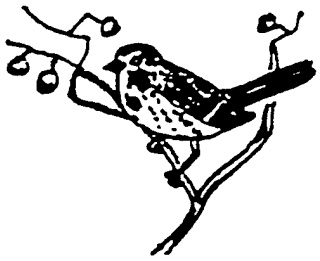
Response to Comment N-11. The text in Section 3.4 has been revised to indicate that there are 2 separate levels of designation at Mare Island—a restricted NHL area and a larger NRHP historic district. In early 1997, the NPS declined to accept the NRHP historic district as the basis for a revised NHL boundary. Thus, there are 2 levels of designation—the more restricted NHL and the larger NRHP historic district.

Response to Comment N-12. The text in Section 4.4 has been revised to include a summary of the MOA, and the MOA and its subappendices are included in Appendix D. Mitigations contained within that MOA address a broad range of short-term and long-term impacts to the historic properties at Mare Island. Mitigation measures presented in the MOA become legally binding once the document is accepted by the Environmental Protection Agency and a Record of Decision (ROD) is completed. All

parties have signed the MOA, and property transfer will include the requirements of the MOA; as such, it is in the best interest of Vallejo to abide by the required mitigation measures.

Response to Comment N-13. As noted in the responses to comments C-6 and C-7, the principal means of avoiding or mitigating demolition or damage to historic or archaeological resources is the MOA. In the MOA, Vallejo agrees to designate as local landmarks the historic landscape elements, identified as contributing parts of the NRHP historic district. This designation will assure local historic preservation review of any transportation project that might affect a designated historic landscape element.

NAPA - SOLANO



AUDUBON SOCIETY

October 25, 1995
336 Benson Avenue
Vallejo, CA 94590-3027

Mr. Jerry Hemstock,
Environmental Impact Statement (EIS) Project Manager, Code 09F2JH
Western Division Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, CA 94066-2402

Re: Comments on the EIS/EIR for the disposal of MINS, Vallejo, CA

Dear Mr. Hemstock,

I am writing to you today in behalf of the 1,000+ members of the Napa-Solano Audubon Society (NSAS) on our comments to the Environmental Impact Statement (EIR)/Environmental Impact Report (EIR) for the Disposal of Mare Island Naval Shipyard (MINS), Vallejo, California.

The following are our comments.

- Page 3-80, ¶ 6 Shouldn't rare (the State of California's terminology) be added to endangered, threatened, or proposed for endangered or threatened status? Plants or animals that are categorized as such are afforded the same protections as endangered species. If this is so, page 3-81, Table 3-15, should list Mason's lilaeopsis should be listed under plants in the first group **RARE, ENDANGERED, AND THREATENED SPECIES.** O-1

- Page 3-81, Table 3-15 in the column Occupance at Mare Island, California brown pelican should be CO instead of P, western snowy plover should be CO instead of U, Barrow's goldeneye, osprey, Caspian tern, loggerhead shrike, San Pablo song sparrow should be C instead of P. O-2

- Appendix D, table D-2 should be more like table D-1, Plant species detected on MINS, ie Animal Species Seen or that could potentially occur on MINS. Recommend highlighting by underlining or the use of bold letters, or asterisk or dagger the items that could potentially occur on MINS. Add the following fish to the list found in the drydocks...rainbow trout, barbed sand bass, northern midshipmen, striped surf perch, walleye surf perch, tule perch, black perch, pacific herring, pacific lamprey, anchovy. I think the EIR/EIS should mention dungenous crab. Add the following birds to the list, wood duck, Allen's hummingbird, and hooded oriole, The following birds names are misspelled black-necked stilt, downy woodpecker, and tricolored blackbird. The following names have been changed, green heron instead of green-backed heron, spotted towhee instead of rufous-sided towhee. Table D-3, please make the following changes. O-3

Bldg 104, pellet abundance, 2, Notes, West end of building; Bldg A258, pellet abundance, 3, Notes: found inside the building; H-1 under Notes Mexican freetailed bat removed from building 12/27/94, picture is available. O-4

This concludes our comments for the time being. There may be more to come if time permits.

Sincerely,

Robin L. C. Leong

Robin L. C. Leong
Member of the conservation committee NSAS

Response to Comments

Response to Comment O-1. EIS/EIR Section 3.6.3, Sensitive Species, now includes rare as well as threatened and endangered. EIS/EIR Table 3-15 has been modified to list Mason's lilaeopsis under plants as an "Endangered, Threatened, and Rare Species." Mason's lilaeopsis is also discussed in Section 3.6.3 under Sensitive Plans and in Section 5.5, Cumulative Impacts.

Response to Comment O-2. Changes have been made to Table 3-15 as indicated by the commenter.

Response to Comment O-3. All of the species listed in Appendix Table D-2, now Appendix Table F-2, have been known to occur on Mare Island or in nearby areas. Species seen on Mare Island and nonnative species have been called out in notes on this table. Some fish species listed by the Audubon Society were not identified in the EIS/EIR because no genus or species names could be identified for them from existing data. The following birds have been added to Appendix Table F-2: wood duck, Allen's hummingbird, and hooded oriole. The identified misspelled names have been corrected as indicated. The American Society of Ornithologists recently suggested that the green-backed heron be renamed the green heron, representing a taxonomic change, which has been incorporated into Appendix Table F-2. Rufous-sided towhee is the currently accepted name for this species. "Spotted towhee" is an older name that is no longer in popular use.

Response to Comment O-4. A bat survey was conducted as part of the EIS/EIR analysis and the results of this survey are summarized in the EIS/EIR. In that survey, Buildings 104 and A258 were both investigated, and no pellets were found, indicating the absence of bat habitation. The source for the observations is not stated by the commenter, but bats are known to exist in the buildings on base, and, as indicated in the EIS/EIR, the Mexican freetailed bat is a common species and no impacts would be associated with removal of this species due to reuse activities.

SOLANO COUNTY FARMLANDS AND
OPEN SPACE FOUNDATION

Post Office Box 115
Fairfield, California 94533
(707) 428-7580

October 30, 1995

Engineering Field Activity West
900 Commodore Drive
San Bruno, CA. 94066-5006

Attn: Mr. Jerry Hemstock

RE: MARE ISLAND

Dear Mr. Hemstock:

This letter is to supplement my testimony on the Draft Environmental Impact Statement/ Environmental Impact Report (EIS/EIR) for the Mare Island Naval Shipyard Disposal and Reuse, given at the public hearing on September 27, 1995. The Solano County Farmlands and Open Space Foundation was represented on the Reuse Committee for Mare Island appointed by the Mayor, and maintains a strong interest in open space conservation as part of reuse of the facility.

The EIS/EIR discusses the current dredge material deposit program at Mare Island, and briefly alludes to alternative methods of future disposal, and states on page 4-74 that transfer of three dredge disposal ponds in the vicinity of Building 505 to the United States Fish and Wildlife Service would have a significant impact on dredge disposal capacity. The mitigation for this would be to find additional capacity elsewhere on Mare Island. The report states, however, that new sites for dredge material disposal are limited by impact upon sensitive species or habitats.

I am writing to elaborate on my testimony of September 27, to the effect that this question was investigated by a subcommittee of the Reuse Committee, and we developed two possible alternatives which in our judgement would allow preservation of the three ponds in question without loss of disposal capacity. These were:

1. increase the height of the remaining ponds to increase their capacity. The Reuse Committee envisioned that the ponds would be added to the Mare Island Regional Park upon completion of their life as spoil deposit areas, and, since they would clearly be upland in character upon completion, it did not appear critical whether they were at a certain elevation.

2. work with the Fish and Wildlife Service to utilize the dredge spoils to accelerate the rate of restoration of the Cullinan Ranch to intertidal levels. This may reduce the cost of restoration at Cullinan Ranch considerably.

P-1

Either of these alternatives would preserve the educational value of the inactive ponds around Building 505 and greatly enhance its value as an educational center. These alternatives would also retain the City's access to the disposal capacity that it is seeking. I would respectfully request that these two possibilities be addressed in the Final EIS/EIR.

Thank you for your consideration.

Sincerely,

Neil Havlik

Neil A. Havlik, PhD.
Executive Director

cc: Ann Meredith

Response to Comments

Response to Comment P-1. Dredge ponds are on state reversionary land and land being transferred to the USFWS. These lands are not part of the proposed action analyzed in the EIS/EIR, which is disposal and reuse of surplus land. Actions proposed for these lands are considered in Section 5.5, Cumulative Impacts.

In relation to cumulative impacts, the EIS/EIR offers the following responses:

1. *Increase the Height of Remaining Ponds.* The maximum elevations of the dredge ponds is dictated, in part, by geotechnical considerations. If it is assumed that the dredge pond levees are increased to their maximum heights, then reducing the number of dredge ponds would decrease the overall capacity of the ponds, which may be significant with respect to economical operation of a dredge material rehandling facility. This might be the case whether or not material is removed and shipped off-site. That is because the capacity of the dredge ponds for drying the dredge material is a function of the area of the ponds, in addition to their volume.

2. *Use of Dredge Spoils.* The suggestion to use the dredge material to restore Cullinan Ranch is one of many possible off-site uses of dredge material. Shipping dredge material off-site could maintain the capacity of the remaining dredge ponds. While moving material off-site would not increase the storage capacity at any particular time, it might enable continued economical use of the dredge ponds.

September 30, 1995

Commanding Officer
Engineering Field Activity West
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, CA 94066-5006

Attn: Mr. Jerry Hemstock (Code 185):

I saw a public hearing notice in my local paper not too long ago. It interested me greatly because it concerned the future of Mare Island and Vallejo. I should also tell you that I am a Vallejoan, born and raised, and that I hold an architectural degree (yes, working too).

Because my training involves the built environment and because I know Vallejo and the surrounding areas quite well, I think I possess insight on the uses for Mare Island. Here are some ideas:

- UCSF Medical School 2nd campus
- Mare Island/Vallejo Naval Museum with USS Vallejo as the main attraction
- Cultural Arts Center
- Commercial
- Residential
- Combinations or all of the above

Q-1

In addition, I have provided a copy of an article about the site of the 2nd UCSF campus. Hopefully, these ideas/suggestions could be given some serious thought.

Thanks You.

Blair Duque
(707) 557-6916

...acterize its views as radi-
cal and extreme.

NOTICE OF PUBLIC HEARING

The Department of the Navy in association with the City of Vallejo announces the availability of the Mare Island Naval Shipyard Disposal and Reuse Draft Environmental Impact Statement/Environmental Impact Report (Draft EIS/EIR) and the scheduling of a public hearing to receive public comments on the report. The joint Draft EIS/EIR, prepared in accordance with the National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA), analyzes the potential environmental impacts associated with the disposal of federal surplus land at Mare Island to public or private entities and of reuse alternatives. The Mare Island Reuse Plan, developed by the City of Vallejo, constitutes the preferred reuse alternative in the Draft EIS/EIR. Three alternative reuse scenarios are also considered, including a less intensive development of Mare Island, still based in large part on the Mare Island Reuse Plan, a redevelopment plan focusing on open space, and a no-action alternative which would result in the federal government retaining the property in an "inactive" status.

Pursuant to Section 102(2)(C) of NEPA, the Council on Environmental Quality Guidelines (40 CFR 1500-1508), and CEQA, the Navy and the City of Vallejo are soliciting public comment on the Draft EIS/EIR. Copies of the Draft EIS/EIR are available for review at the following libraries: John F. Kennedy Library, 505 Santa Clara St., Vallejo, CA; Springstowne Library, 1003 Oakwood Ave., Vallejo, CA; Vacaville Library, 1020 Ulatis Dr., Vacaville, CA; Fairfield-Suisun Library, 150 Kentucky, Fairfield, CA; Benicia Library, 150 L, Benicia, CA; Suisun City Library, 333 Sunset, Suisun, CA; Dixon Public Library, 135 East B, Dixon, CA; Napa Library, 1150 Division St., Napa, CA; St. Helena Library, 1492 Library Lane, St. Helena, CA; Calistoga Library, 1108 Myrtle St., Calistoga, CA; and Yountville Library, Yountville, CA.

A PUBLIC HEARING ON THE DRAFT EIS/EIR
will be held
Wednesday, September 27, 1995 at 7:00 p.m.
at the following address:

VALLEJO
ITY COUNCIL CHAMBERS
CITY HALL
555 SANTA CLARA STREET
VALLEJO, CALIFORNIA

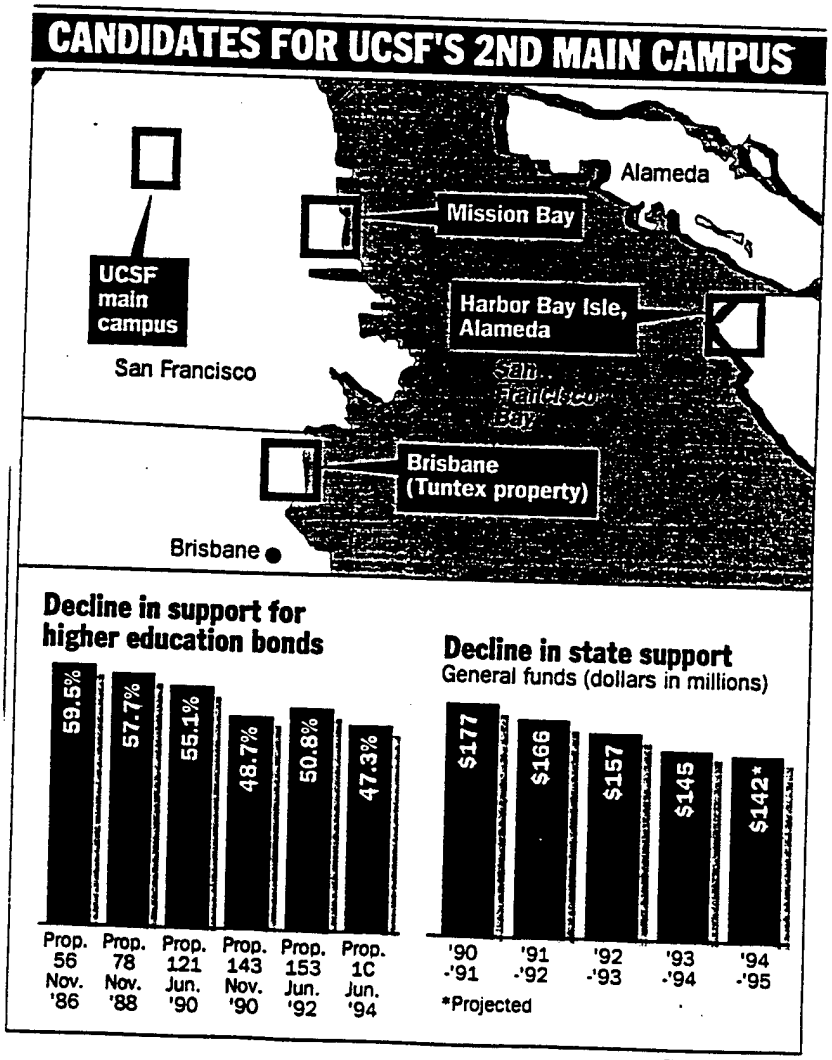
The purpose of the public hearing is to receive written and verbal comments on the Mare Island Naval Shipyard Disposal and Reuse Draft EIS/EIR. A brief presentation will precede the request for public comment. Navy and City of Vallejo representatives will be available at this public hearing to receive comments from the public regarding the environmental documentation.

Agencies and the public are encouraged to provide written comments in addition to, or in lieu of, oral comments at the public hearing. Comments should clearly describe specific issues or topics of concern. Written statements must be received at the address below no later than October 16, 1995.

COMMANDING OFFICER
ENGINEERING FIELD ACTIVITY WEST
NAVAL FACILITIES ENGINEERING COMMAND
900 COMMODORE DRIVE
SAN BRUNO, CA 94066-5006
ATTN: MR. JERRY HEMSTOCK (Code 185)

For additional information, please contact Mr. Jerry Hemstock at telephone (415) 244-3023, fax (415) 244-3737 or Ms. Ann Merideth, Planning Division, City of Vallejo, 555 Santa Clara Street, Vallejo, California 94590-5934, telephone (707) 648-4326, fax (707) 552-0163.

New UCSF campus on hold



EXAMINER GRAPHICS

For home deliver... 10-114 1-800-281-EXAM.

Funding cuts force officials to delay second Bay Area site until 2000

By Gerald D. Adams
EXAMINER URBAN PLANNING WRITER

Disclosing for the first time a decision that was made nearly two years ago, top UC-San Francisco officials said they have postponed indefinitely a long-awaited plan to build a second major campus.

UCSF planners had said that a second campus site — a complex of between 2 million and 3 million square feet — would be selected by 1994 and that construction would get under way by 1997.

Blaming cuts in state and federal funding, UCSF Chancellor Joseph Martin said last week he didn't foresee construction on the second campus beginning before the year 2000.

UCSF Vice Chancellor Bruce Spaulding said the second campus plan was actually shelved in late 1993 when the medical center began concentrating on a bid, ultimately unsuccessful, to use the Letterman Hospital complex in the Presidio.

Since UCSF planners first began talking about a second campus, developers eager to capture a prestigious anchor tenant and an estimated 6,000 or so biotechnology jobs have aggressively lobbied the university.

The three main competing locations have been:

▶ **San Francisco:** A 300-acre plot in Catellus Development Co.'s Mission Bay project, on the waterfront south of the Bay Bridge. Catellus was formerly the Southern Pacific Railroad's real estate arm.

▶ **Brisbane:** 550 acres owned by a Taiwanese conglomerate, Tuntex Corp.

▶ **Alameda:** 200 acres in the city's Harbor Bay Isle section controlled by East Bay developer Ron Cowan.

No shock among developers

For Tuntex, the decision to delay the plan is a blow but only a partial surprise.

"I'm aware it's on hold, (but) I continually call and ask what's the schedule," said Bonnie Bamburg, Tuntex public relations director.

Tuntex had delayed development in Brisbane until it could figure out what uses would be compatible with an anticipated university facility, she said.

For Catellus Development Co., which has been searching for an anchor tenant to begin building on its site, the news was almost expected.

"Because of budget constraints, I had no illusions that they could control their destiny," said Nelson Rising, the company's chief executive officer. "We tried very hard (to get the campus) but knew we had to be doing it on a flexible basis."

At the San Francisco Redevelopment Agency, which has spearheaded city efforts to capture the second campus, Deputy Executive Director Richard Kono said, "We are extremely disappointed."

Federal, state money drying up

The decision to delay the new development comes after a series of funding setbacks for the University of California and higher education in general.

UCSF's Spaulding noted that state support for the campus had shrunk by 25 percent — from $177 million in 1990-91 to a projected $142 million for this fiscal year.

Support from the National Institutes of Health is also winding down, from $347.5 million in 1993 to $335.4 million in 1994.

Moreover, voters have virtually stopped approving higher education bonds, he said, noting that a June 1994 higher education bond issue received only 47.3 percent of votes cast.

While postponing a second campus, Chancellor Martin said, UCSF is concentrating on satisfying its short-range needs for space at "satellite" campuses within San Francisco:

▶ At UCSF-Mount Zion in the Western Addition, $100 million worth of construction is under way for two medical office buildings and 100,000 square feet of laboratories.

▶ Negotiations are under way for 100,000 square feet for biomedical research laboratories at either San Francisco General Hospital or at the Tuntex-owned San Francisco Executive Park near Candlestick Point.

▶ At Laurel Heights, UCSF is focusing efforts on building a $32 million social and behavioral science center where the sprawling, mostly vacant former Fireman's Fund Insurance Co. headquarters now stands. The site had been under attack from neighbors for years, leading UCSF to abandon efforts to build medical research laboratories.

Final plans for the Laurel Heights center are to be presented Thursday to the UC Board of Regents.

Response to Comments

Response to Comment Q-1. Several of the uses identified by the commenter are part of the Reuse Plan Alternative. Vallejo is actively pursuing a variety of options for the reuse of Mare Island. Specific uses may be selected that fit within the EIS/EIR alternatives land use classifications.

Letter R

Engineering Field Activity West
900 Commodore Drive
San Bruno, CA 94066-5006

Dear Mr. Hemstock

I find the Reuse Plan for Mare Island to be totally unacceptable. A southern crossing should not even be considered. Now as before, for nothing has changed, there is ample access to the Island from the North and across the Tennessee Street bridge. I suggest comparison to the much larger area of South Alameda which is served by Doolittle Road and the High Street Bridge. R-1 R-2

More important, this plan and the alternatives offered to it miss the point. Vallejo lost jobs. It didn't lose a Marina; it has two already, both excellent. It didn't lose a golf course; it has one that's in debt to the City. It doesn't need another residential area. The people who left Vallejo when the Base closed, many of them, are still trying to sell their homes. It's a buyer's market. The people who replace them, whatever their employment on the Island might be, will have no trouble relocating. They must be encouraged to do so within Vallejo proper. R-3

Vallejo, while a beautiful city, finds itself today at a turning point. It can go either way. It's age can go against it, as in West Oakland and Richmond, where the lovely old homes turned into slums and hopeless ruins, or it can be as in San Rafael and Benicia where they were renovated, cared for, and where today they are those cities' greatest asset. They wait to be discovered here by the people who will be attracted by the new offices, shops, schools and studios established on Mare Island. R-4

As for the alternative plans - Medium Density and Open Space - they are not really alternatives, are they? They are the Reuse Plans with some cuts made to it, I assume for the people against so much spending. Spending will be necessary but with the stipulation always that it brings jobs to Vallejo residents. Replace each of those putting greens with an office building and you might grab my attention. R-5

One last thing, do not swell your statistics by including Roosevelt Terrace. Not only is it not on the Island, it is not proper housing for this point in time. After World War II, some cities (Oakland and Richmond again) felt it necessary to make apartments out of military housing. The areas where they were located never recovered. I guess I'm saying we ought to look around us in our very own Bay Area and learn our lessons, good and bad, from our neighbors. But most of all give us an alternative plan for Mare Island that has "jobs" for Vallejoans and not for elitist Islanders written into the future. R-6

I hope you'll take these comments seriously. Thank you,

Donald E. Babb
137 B Street
Vallejo, CA 94590

Response to Comments

Response to Comment R-1. The commenter's opinions are noted.

Response to Comment R-2. The southern crossing bridge across Mare Island Strait was proposed because of the substantial additional traffic that would be generated by buildout of the Reuse Plan Alternative. The existing access routes to Mare Island would not have sufficient capacity to handle the projected additional traffic, even assuming proposed upgrades. The Medium Density Alternative and Open Space Alternative included in the EIS/EIR propose lesser densities of reuse at Mare Island that would generate less traffic. Under those alternatives there would be no need to construct the southern crossing.

Response to Comment R-3. The commenter's opinion is noted. It is projected that implementation of the Reuse Plan Alternative could generate up to 9,669 jobs, thereby increasing employment opportunities for residents of Vallejo.

Response to Comment R-4. The proposed reuse alternatives recognize the desirability of encouraging people to relocate to Vallejo and renovating and keeping historic homes that could be an asset to Vallejo.

Response to Comment R-5. The Medium Density Alternative and Open Space Alternative are intended to consider different densities, locations, and types of uses within the context of the overall reuse plan concept.

Response to Comment R-6. Roosevelt Terrace was included in the EIS/EIR because it is part of the former Mare Island Naval Shipyard property for which the reuse plan was prepared. Vallejo's reuse plan proposes rehabilitation of these housing units. The commenter's concerns regarding possible deterioration of the neighborhood are noted.

October 26, 1995

Attn: Jerry Hemstock,
Code 185JH
Engineering Field Activity West
900 Commodore Drive
San Bruno, CA 94066-5006

RE: **Environmental Impact Staement/ Environmental Impact Report for the Disposal and Reuse of Mare Island Naval Shipyard**

As a resident of Vallejo and citizen, I am interested in the well being of the people of this city. As a homeowner, I am interested in the safety and quality of my neighborhood and the value of my hard-earned property. As an artist, I am interested in the cultural potential of Mare Island as a thriving and vital future for Vallejo and the Bay Area.

The Draft of the EIS/EIR report is extensive and has addressed many of my concerns from the scoping stage. I appreciate the extent of the impact study and the voluminous information made avaiable to the public. However, the Alternatives to the Proposed Action leaves very little choice but to support the **Open Space Alternative.** Although this would not be my best answer for Reuse, this Alternative comes closest to preventing over-development and speculation, demolition of existing buildings and destruction of Mare Island's natural beauty. This plan will still provide job opportunites. My fear, however, is that this Alternative might minimize the degree of environmental cleanup for certain areas. S-1 S-2

Whatever direction the Reuse takes, I emphasize that continued funding for Navy's Environmental Cleanup of Mare Island be a high priority for the U. S. Congress. I request that the City of Vallejo adopt the Open Space Alternative or a similar plan. In particular, I strongly request the following to be included in all Reuse Plans and in the Final Draft of the EIS/EIR Report: S-3

LAND USE IMPACT (AREA 10)

SOUTHERN CROSSING AND AREA 10—MARINA/ RESIDENTIAL

- Eliminate the Southern crossing from the Proposed Action Reuse Plan and any future reuse plan because of its negative impact on everything S-4
- Eliminate residential/condos and marina from area 10 in all Reuse Plans because of its significant conflict with surrounding land uses. The City of Vallejo has ample residential property available, especially with the addition of existing Shipyard units in Roosevelt Terrace, Farragut Village and Coral Sea Village S-5 S-6

MITIGATION (AREA 10)

1. USE EXISTING BUILDINGS FOR OFFICE SPACE AND STUDIOS FOR ARTS, CULTURAL, HISTORICAL, PARK MANAGEMENT, ETC. S-7

- Preserve the tranquility of neighboring designated open space area #12 by limiting new construction, controlling density, and applying well designed and unobtrusive parking areas S-8
- Protect the welands and unique scenic quality of the waterfront by transforming Area 10 into a buffer zone with the preservation of the historical buildings, cleanup of IR-Site 4 and creating an open space extension or a waterfront park next to the heavy industrial Area 5 S-9

2. TENNESSEE ST/MAIN GATE CAUSEWAY

- Improve existing bridge or build a new one that does not impact traffic density or obstruct scenic views
- Utilize existing tracks for light rail passenger trolleys
- Improve all of Tennessee St. into an attractive, landscaped boulevard connecting I-80 to an artistic gateway/entrance to Mare Island S-10

3. FERRY SERVICE

- Include more emphasis on a ferry shuttle across river as a commute connection or vehicle transport to alleviate traffic, and as a tourist attraction S-11

LAND USE

PROMENADE & SOUTHERN PEDESTRIAN WALKWAY — S-12

- Retain waterfront promenade concept, and link with open space area on the southern tip

SOCIOECONOMIC IMPACT

ROOSEVELT TERRACE — S-13

- Include a better explanation of the current plan and socioeconomic impact of McKinney Act screening on surrounding neighborhood

MITIGATION — S-14

- Limit density and numbers of subsidized housing to ratios equivalent to that of the rest of the city
- Use some of the existing buildings as an extension of Federal Terrace School
- Include an alternative proposal that considers a village like approach, mixing small business/shops with different "levels of income" housing, small playgrounds, child care facilities

CULTURAL RESOURCES IMPACT

DEMOLITION OF HISTORIC BUILDINGS — S-15

- Protect buildings from unnecessary demolition (p.4-39)

MITIGATION — S-16

- Establish a public review process
- Extend the boundaries of the Reuse Plans' Historic District #4 (as shown in Figure 3-9 on page 3-60) to include the five areas containing more than 100 structures eligible for listing on the National Register (Over 500 buildings on Mare Island are historically significant) — S-17
- The City of Vallejo should apply for historic preservation funds and available leasing incentives (20% income tax rehabilitation credit program) — S-18
- Seek retrofitting and renovative actions first — S-19
- Enlist the National Park Service expertise — S-20
- Use the $100,000 feasibility study money earmarked for a southern crossing to establish a historical buildings preservation and historic district management group instead — S-21

AESTHETICS AND SCENIC IMPACT

SCENIC RESOURCE AREAS

AREA 2/ Waterfront (p. 3-67) **Scenic Quality Class B should be changed to A.** — S-22

Obviously whoever rated this view did not look at Mare Island from the hills on the Vallejo waterfront, which includes a vista of San Pablo Bay and Mt. Tam; also the view of the buildings lit up at night should be considered an attraction!

AREAS #7 and #9 (p. 3-70) **Scenic Quality Class B should be changed to A.** — S-23

The panoramic views are incredible!

Thank you for considering my concerns and accepting my comments,

Diana Krevsky

Diana Krevsky
133 B Street
Vallejo, CA 94590

Response to Comments

Response to Comment S-1. The commenter's qualified support for the Open Space Alternative is noted.

Response to Comment S-2. The commenter's concern regarding minimization of environmental cleanup under the Open Space Alternative is noted. While this alternative considers less dense land uses than the other reuse alternatives, the general land use patterns would not be dramatically changed. Since levels of cleanup are influenced by the type of land use and by regulatory requirements, similar levels of cleanup would be required for each of the reuse alternatives.

Response to Comment S-3. The suggestion of the commenter that continued funding for the Navy's environmental cleanup be a high priority for the US Congress is noted. See also the response to comment I-9.

Response to Comment S-4. The commenter's opinions regarding the southern crossing bridge are noted. The southern crossing was proposed because of the substantial traffic generated under buildout of the Reuse Plan Alternative. Under the reduced densities considered by the Medium Density Alternative and Open Space Alternative, the southern crossing would not be required.

Response to Comment S-5. The suggestions of the commenter to eliminate residential/condos and the marina from Reuse Area 10 are noted. The Reuse Plan Alternative has been modified to reduce the number of residential units from 800 to 750 and to remove the marina. The portion of Reuse Area 10 formerly proposed for the marina will be transferred to the US Army for development of its reserve center. Under the Open Space Alternative, Reuse Area 10 would not be developed.

Response to Comment S-6. The opinion of the commenter that Vallejo has a sufficient number of residential units, and would therefore not need the units proposed for Reuse Area 10, is noted.

Response to Comment S-7. The suggestion of the commenter to use existing buildings for such uses as office space and studios for arts, cultural, historical, and park management is noted.

Response to Comment S-8. The suggestion of the commenter to apply construction and density controls to neighboring reuse areas to preserve the tranquillity of Reuse Area 12 is noted.

Response to Comment S-9. The suggestion of the commenter to protect wetlands and scenic quality by transforming Reuse Area 10 into a buffer zone is noted.

Response to Comment S-10. The suggestions of the commenter to improve the existing bridge, to use existing tracks for light rail passenger trolleys, and to improve all of Tennessee Street are noted. The reuse alternatives consider light rail as an option.

Response to Comment S-11. A ferry shuttle between Vallejo and Mare Island is envisioned by the reuse alternatives. See Sections 2.3.3, 2.4.3, 2.5.3 (Transportation Improvements) and 4.9 (Traffic and Circulation).

Response to Comment S-12. The suggestion of the commenter to retain the waterfront promenade concept presented in the reuse alternatives is noted.

Response to Comment S-13. Vallejo is currently negotiating with a developer to redevelop Roosevelt Terrace. As stated in the reuse plan, up to half of the units would be removed. The project as currently

envisioned is for first-time homebuyers. The McKinney Act has been complied with by providing homeless facilities on the island under a plan approved by HUD.

Response to Comment S-14. The suggestions to limit the density and numbers of subsidized housing units, to use some of the existing buildings as an extension of Federal Terrace School, and to include an alternative proposal that considers a "village" approach are noted.

Response to Comment S-15. Rehabilitation is the preferred option for all significant historic buildings. If rehabilitation or other reuse is not an option, and the structure cannot be occupied because it is unsafe, demolition becomes a necessity. The approach taken in the reuse plan is rehabilitation, wherever feasible; however, the Vallejo's historic preservation regulations do not preclude demolition.

Response to Comment S-16. Vallejo, like all municipalities, regularly holds public city council and planning commission hearings, where proposals are presented for public review and comment. The reuse of Mare Island is and will continue to be an open public process. In addition, the CEQA and NEPA processes provide several opportunities for public input and comments.

Response to Comment S-17. The boundary of the proposed historic district shown in Figure 3-9 is also the proposed National Historic Landmark boundary; all significant buildings would be contained within that proposed boundary.

Response to Comment S-18. Vallejo is a Certified Local Government and is eligible for grants from the state. The city has received grants in the past and will continue to apply for grants in the future. During the MOA negotiations, it became clear that funds are not available from state and Federal agencies for Mare Island historic preservation. The city already informs property owners about tax incentives for historic properties and also uses the State Historic Building Code as an incentive for preservation.

Response to Comment S-19. As indicated in the response to comment S-15, rehabilitation is the preferred option for all significant historic buildings. The approach taken in the reuse plan is rehabilitation, wherever feasible; however, Vallejo's historic preservation regulations do not preclude demolition. The MOA, included as Appendix D in this document, provides more specific details regarding protections for historic buildings at Mare Island.

Response to Comment S-20. The National Park Service is a party to the discussion regarding National Historic Landmark preservation. It lacks funding to take the lead in preserving individual structures at Mare Island but is willing to comment on actions involving buildings in the National Historic Landmark, as is its role. The National Park Service will be available for consultation with Vallejo once Mare Island is conveyed from Federal ownership to the city. See also comment letter "C" in this document.

Respond to Comment S-21. Protections for historic resources at Mare Island have been established in the MOA, which sets in place a series of steps that have been taken or will be taken to ensure that historic preservation is given a priority in the reuse of the base. Some of these steps will be taken by the Navy, some by Vallejo. The provisions of the MOA are outlined in Section 4.4, and the MOA is included in Appendix D.

The grant for the feasibility study referenced by the commenter is $400,000, with a $100,000 match at the local level, for a total of $500,000. Vallejo is currently securing the match amount and will use the funds to study the southern crossing as well as circulation throughout Mare Island.

Response to Comment S-22. Scenic Quality Class A is reserved for those areas that combine the most outstanding characteristics of landform, vegetation, water, color, adjacent scenery, scarcity, and cultural

modifications. While the shipyard waterfront area does have some outstanding characteristics, it also has some characteristics that are fairly common to the area or that detract from the overall scenic quality of the area (such as some of the industrial structures). This combination of characteristics resulted in a classification of Scenic Quality Class B for this area. It should be remembered that a rating of Scenic Quality Class B is fairly high and includes features that are considered an attraction, such as those described by the commenters.

Response to Comment S-23. *Scenic Resource Area 7, Upland Open Space.* As noted above, Scenic Quality Class A is reserved for those areas that combine the most outstanding characteristics of landform, vegetation, water, color, adjacent scenery, scarcity, and cultural modifications. While the Upland Open Space area contains some outstanding characteristics, it has been modified through its association with the industrial shipyard activity. A rating of Scenic Quality Class B is fairly high and includes features that are considered an attraction, such as the panoramic views from this area.

Scenic Resource Area 9, Extensively Disturbed Open Space. This area was actually assigned a rating of Scenic Quality Class C, not "B." There are extensive and striking panoramic views from this area, but this is fairly common of many locations on or near the waterfront. The "C" rating was assigned to this area because its landform is ordinary and very common to the region and because the area has been extensively disturbed by the construction of active and inactive dredge ponds.

10.4 PUBLIC HEARING COMMENTS AND RESPONSES

The following provides comments received at the public hearing and responses to the comments. The comments are taken from the transcript of the public hearing prepared by a court reporter. Public comments are numbered to correlate to the person making the comment (see Section 10.2). Written responses to the comments are provided immediately following the public hearing transcript.

my name is Neil Havlik, and I served on the Reuse Committee that -- or Futures Committee that worked on the Reuse Plan and was involved in a number of the subcommittees of that committee.

I'd like to speak to one particular issue which a subcommittee to which I belonged worked on, and we were, I guess you might say, unsuccessful in convincing the full committee to go along with our recommendations. However, I still feel that this is an alternative that should be looked at and I think it has a place in the EIR/EIS; and this is looking at the use and ultimate disposition of the dredge ponds.

The U.S. Fish and Wildlife Service has requested the transfer of a sizable portion of the wetlands and several of the both inactive and active dredge ponds and the Building 505, which is (indicating) right here, to the U.S. Fish and Wildlife Service, to be used as an addition to the San Pablo Bay National Wildlife Refuge. The City, or the Reuse Committee and the certification that was done by the City opted to preserve these three (indicating) ponds, which are active dredge ponds, to be used for continued dredge disposal. CEQA requires that in the analysis you look at an environmentally superior

PHA-1

alternative; and I would like to suggest something that I think would be a win-win situation both for the City and for the Fish and Wildlife Service, because this situation has put those two agencies on a collision course.

The service is looking at the restoration to tidal action of the Cullinan Ranch property, which is about a half a mile north of Mare Island; and it will take at least ten million cubic yards of material to bring that area from its current elevation back up to inner tidal levels. And I would like to ask that this EIR examine the feasibility of some cooperation between the City and the Service to look at using at least some of that capacity -- ten million yards, maybe half, maybe a third, maybe two thirds, I don't know -- to substitute for the one million cubic yards that is represented by those three ponds.

PHA-1 (cont.)

What that can do is to allow the transfer of those three ponds to the Service, keeping them in their current status or allowing them to more quickly revert to something in support of the Building 505, which is seen as a environmental education center, without losing the represent -- the value that that dredge capacity represents.

It would also potentially allow for a more rapid restoration of the Cullinan Ranch property to tidal action, speeding up that process by augmenting the natural filling process, and in my judgment would allow for a less expensive means of natural -- of speeding the natural accretion that is perceived for that area, which is a very -- the concepts that have been presented have been very -- in my judgment, look to be very expensive.

I think this will have a beneficial effect for the City, it will have a beneficial effect for the Service, it will have a beneficial effect for the federal government, by virtue of reducing the costs of the restoration at the Cullinan Ranch. And I think that that benefits -- it's a win-win-win situation for everybody, and I would like to see that that would be explored in this -- in your evaluation of the public comments. Thank you.

PHA-1 (cont.)

LT. CDR. BROVARONE: Thank you, sir. Mr. John Osborne; Mr. Osborne is a resident of Vallejo.

MR. OSBORNE: John Osborne, I live in Vallejo, speaking as a private citizen. The Reuse Area 2 in Section 4.1, Table 4-1, there

PHB-1

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should be a column for the redevelopment of the PWC maintenance area, which -- the proposed action creates residential, commercial and retail, which is a change in use as far as residential's concerned. That will build residential in the area on landfill and also adjacent to railroad repair building; so another column in Table 4-1 is needed to mitigate those impacts, because I think there'll be significant impacts building residential on landfill, and also next to railroad repair building. PHB-1 (cont.)

If I had time I'd go into another local situation here, we actually have an existing problem right outside of Vallejo where they built homes on landfill. A statement in Section 4, Page 4-30, states, "A small increase in demand for police and fire would not be a significant increase." I disagree with that; any increase and demand in the City of Vallejo for police and fire is significant. We only have 1.18 sworn officers per thousand and only six fire stations, so that needs to be relooked at. PHB-2

Also, in Table 1 on page 4-3, the Condition of Grounds and Facilities on Disposal, there's no discussion of that in the text. I have a number of questions on the meaning of that PHB-3

and what it includes. Does it include building condition? Does it include roads? Does it include utilities and steam volts? Does it include hazardous materials? Does its include abandoned structures, such as crane structures over the building ways? Does it include the abandoned utilities -- utilities that might be abandoned, dry dock pump facilities and dry dock maintenance?

In Section 4.2, on the Socioeconomics, there's a statement in there in the Table 4.2, in the column Effects on Population in Housing on Disposal, "No effect." In fact, on disposal there's 1036 existing units that's transferred; and it's hard for me to believe that the 1036 existing units has no effect on disposal. Also, Table 4.2 does not address the effect of the construction and maintenance of the infrastructure for reuse.

PHB-4

PHB-5

Section 4.3, Public Services, Increased Demand for Vallejo Police and Disposal, it's also again stated "Not significant." There's a statement in there regarding plans and policies on page 3-35, related to City of Vallejo policies. New developments pay for added -- this is the end of the sentence -- the closest new

PPB-6

PHB-7

developments pay for the added cost of public services. Well, new developments may pay for the added cost of some public services, but it does not pay for the added cost of police services, the way that it's working here. That needs to be reevaluated.

PHB-7 (cont.)

There's mention in there to the local Redevelopment Agency, LRA. As far as I know, this is still handled by the City Council and has not been a redevelopment area created to cover Mare Island. So that any tax -- and related to that, there's some -- an indication in there that there may be tax increments that would go to a redevelopment agency -- or I should say to the general fund, that may in fact end up going to a redevelopment agency; the lease profits currently set up, at least in a couple leases that I'm familiar with, are to be reinvested into Mare Island and will not pay for the services of the rest of the City or the added services to Mare Island.

PHB-8

PHB-9

In Section 4.4, Cultural Resources, the impact of vandalism and unauthorized collection, and the sentence goes on, on disposal is rated at zero. I don't understand; unless there's going to be sufficient security to prevent vandalism, I

PHB-10

don't think that's a realistic assessment. Without more information; it may be realistic, if there's more information. PHB-10 (cont.)

Again, in Section 4, 4.4, Section 106 Review 36 CFR, Part 800, I believe requires historic properties to be assessed in the EIS, and I think, in Section 4.4 on page 4.39, major issues related to the assessment of the historic properties is really left hanging. PHB-11

Water resources in Section 4.7 does not include -- the Table 4-14 does not include storm-water runoff polluted by sewer cross-connects. PHB-12

Also, indicate on 4-68, dredging may be undertaken as a means of removing ordnance or remediating contaminants, under the heading The Type and Amount of Dredging Required by Reuse. That table I don't think realistically indicates that unexploded ordnance may be left behind that will be uncovered at a future date. I think that needs to be clarified. PHB-13

Section 4.7, Water Resources, Ground and Surface Water, the current lease between the Navy and the City of Vallejo has a restriction in it that specifies the lessee should avoid dermal contact with surface water. Though -- my PHB-14

question is, why is that in the lease, and why isn't it addressed in the EIS, surface water -- ground water and surface water? PHB-14 (cont.)

Also under Water Resources there's another section on -- I believe it's out of Section 4.7, but on page 160 of Section 4, indicates that naval gun propellant and small arms munitions frequently wash up on the shore in the Dike 14 area. That's not really addressed, I don't believe, in any other section; it may not be properly addressed in Section 4.7, but I don't believe that's addressed in any other section, or maybe in fact what's on page 160 may contradict some other conclusions of No impact on disposal. PHB-15

Section 4.8, Geology and Soils, Table 4-15 does not contain a column on contamination of soils, which would include manholes and utility vaults; and my question on that would be what impact that might have on future maintenance; for instance, if they have to remediate hazardous materials and utility vaults. PPB-16

Section 4.9, Traffic and Circulation, increased traffic on local access roadway including the causeway is not significant. Figure 4.1 on 4-92 shows serious reserve and that's negative capacity for the causeway, PHB-17

although on page 4-93 it states the following: "As shown" -- it says, "As shown on Figure 4-1, Year 2020 volumes on local access roads would not exceed capacities." That contradicts what's on the graph. (cont.) PHB-17

Section 4.9, Traffic -- this is Traffic and Circulation, continued; on page 3-141, it says most of the bicycle routes are on-street Class Three facilities, meaning that the bike lane is marked by signs only and bicycles share the traffic lane with the vehicle traffic. This was in relation to approaches to Mare Island. Well, in fact, if you go out Tennessee Street, there are no marked bike lanes, which agrees with this. The miles that the Tennessee Street goes out, there's one sign that indicates two different directions for a bike lane; and anybody who's biked Tennessee Street knows that it's very dangerous to do so. PHB-18

Then it says, "The system also has Class One facilities near Mare Island, marked bike lanes that are separate from vehicle travel lane." Well, I think -- and it also goes on to indicate, "Bicycling trails extend along the boundaries of River Park and the waterfront near the ferry terminal." I don't really believe that

the words in here are a real accurate and legitimate assessment of bicycle routes. Particularly seems to minimize the fact that the main entrance on Tennessee Street is unmarked and actually -- unmarked on the pavement, marked by only one sign, and actually very dangerous.

PHB-18 (cont.)

MR. POMEROY: If I could interrupt for a second, we usually limit the speakers to five minutes. If you have a couple minutes to go, that's fine; otherwise, we'd like to give them a chance, and then you're welcome to come back up and finish.

MR. OSBORNE: Okay. Well, I can let somebody else come up here. I have a few more comments.

MR. POMEROY: Yeah, why don't we go through the rest of the group, and then you're welcome to come back up and finish.

MR. OSBORNE: You've got more cards?

LT. CDR. BROVARONE: I have one more with me, and then anyone else from the audience.

MR. POMEROY: Then you're welcome to come back.

MR. OSBORNE: Okay, because I have a few more comments.

LT. CDR. BROVARONE: That's what I wanted

to see, if you wanted him to finish. Thank you, Mr. Osborne.

William Johnson. Mr. Johnson's also a resident of Vallejo.

MR. JOHNSON: My name's William Johnson; for the record, 617 Butte Street. I previously submitted a number of comments at the previous scoping meeting, and some of those were addressed in the document and others of them were not. I will only speak to those which were not addressed, today.

One item in particular that was important to me was to look at the impacts from the type of reuse in terms of the consumption of energy and resources. In particular, I have a concern about the preference for demolition of buildings and building new structures, in view of the fact that there is very little landfill available to accept those structures; and also the issue of whether or not doing that is going to result in a higher price for structures, by building new buildings that will bring in people with higher incomes, which will change the utilization of the facility. PHC-1

A lot of the properties there now could be rehabilitated for low- and moderate-income PHC-2

housing, which it would be consistent with the payroll structure of the proposed jobs there, which would result in relatively light traffic impacts by having people living and working on Mare Island. If one builds expensive new housing, that will result in a lot of people commuting off base at peak hours to other jobs out of the community, that pay salaries that are commensurate with their mortgage payments; whereas the people who live away from the -- off base in affordable housing will be coming on base to work at the relatively low-paying jobs. The selection of the price range of housing will have major impact on traffic; and that has not been addressed, I believe, in this EIR at all.

PHC-2 (cont.)

PHC-3

Another concern which was not addressed was the utilization of non-renewable energy resources through the manner in which buildings were dealt with. If buildings are rehabbed to the standards of California Title 24 for energy conservation, the result that will have is a lower energy demand of all of the existing units that are there, which may result in less expenditures being required on infrastructure. A number of statements have been made that there is not an adequate supply of gas and electricity to

PHC-4

supply the units -- an expansion of units; if the units that are there are more efficient, it's possible that more units could be added without incurring an additional impact. This has not been discussed either.

PHC-4 (cont.)

One area that I have a particular concern about is the level of environmental oversight that will take place after the transfer of property. The proposed entity which will run this is IDC, which does not exist and has no track record in environmental management. The proposed board of directors will not have any environmental professionals on it and, inasmuch as this site had been proposed as a Super Fund Site, if the managing entity of the adjacent facilities, not the contaminated facilities but is -- the adjacent facilities, has no experience at managing an environmentally contaminated site, what are the risks to IDC?

PHC-5

And if IDC is an entity that represents the City of Vallejo, the City of Vallejo is self-insured, what is the limit of their financial liability if they're operating a contaminated site and their employees are working on contaminated -- potentially contaminated infrastructure components? That has not been

PHC-6

addressed. The socioeconomic impacts to the community at large from the City having to pay out large settlement claims as a result of that action has not been addressed.

PHC-6 (cont.)

Excuse me, I'm looking through my things.

LT. CDR. BROVARONE: That's okay.

MR. JOHNSON: In the section on -- of the Reuse Plan on capital expenditures, they refer to the creation of debt and the servicing of debt from net operating income, and yet they -- their budget projections show a net operating loss for the next thirty years; so if they have a net operating loss, how are they going to service the debt without drawing from the general fund? This will have a significant social impact on the community, because all of those shortfalls will have to come out of the general fund and will cause reduction of services in all of the other areas in the community; if it can't pay for itself and generate the services for that, then you have a significant impact that has not been addressed.

PHC-7

In addition, it suggests that GVRD, Vallejo Recreation District, is the proposed entity to manage the recreational facilities; the GVRD does not have sufficient funds to operate

PHC-8

and do capital expenditures on their existing facilities. They have stated -- the director has stated that taking on these additional facilities will cause reduction in service in their existing programs. Unless additional funds are found to do this, it will not be necessarily a net benefit to the community; there will be some transfer of services.

PHC-8 (cont.)

Because housing is Vallejo's largest single resource, with perhaps a market value of six billion dollars, perceptions of economic blight -- or I'm sorry, environmental blight are very important in terms of people maintaining their equity in their homes and their liquidity in terms of their ability to borrow money. It's very important, therefore, that cleanup becomes a key reuse priority, to restore the -- people's property values as soon as possible. The number of jobs and the income created from those jobs is a very small number in relation to even a one-percent change in a six-billion-dollar inventory in housing. A one-percent change exceeds the entire general-fund value of the City of Vallejo, so small increments of income to the City, as a result of operating the Reuse Plan in the short-term by postponing long-term cleanups,

PHC-9

will not create net economic benefit to the community; it will cause a net economic loss, which will be spread throughout the entire population, although the benefit to a few people may accrue from those who get jobs, and everyone else will suffer.

PHC-9 (cont.)

LT. CDR. BROVARONE: Do you have more items you have there, Mr. Johnson?

MR. JOHNSON: I just have three more short items.

There's a concern about the presence of lead-based paint on most of the properties there. Buildings that have lead-based paint in them will have a lot of constraints for tenant rehab work to take place. This may severely restrict the leasing opportunities for some of the smaller facilities in buildings where they might have commercial or other use, and there's no -- it is not addressed in the Plan if that work should be undertaken by IDC prior to leasing and whether or not that's a cost-effective measure.

PHC-10

They do not compare the costs of demolition vis-a-vis the costs of rehabilitation of properties and whether or not that's appropriate for the market structure, which I

PHC-11

believe I touched on earlier.

Also, there's no discussion of integrating the transit system on the island with the Vallejo transit system -- public transit system and, in particular, items like an electric light rail and possible manufacturing of those vehicles -- manufacturing and servicing of those vehicles at Mare Island, utilizing their half-price electric power, which could mitigate a lot of the traffic problems if it was done in an appropriate manner. PHC-12

One other general comment is that our alternates are not really alternates; they're smaller versions of the same thing. There's no globally different reuse that -- where the primary reuse is a different function, such as university or educational facility, with industrial reuse being a secondary activity; and I believe that type of scenario should be considered as one of them because, if we need in the end to do that and we have not proposed that as an alternate, we can't follow that path later because we haven't addressed it in the EIS; so we should address that so that door is open to us in the future. Thank you. PHC-13

LT. CDR. BROVARONE: Thank you, sir.

That's all the cards I have for now. I'm going to go through the audience right now and see if there's anyone else that has a comment, and then we'll get back to Mr. Osborne. Before I do that, though, I do apologize to the speakers; since our loss of microphone I have been keeping an eye on them and the court reporter, making sure that she's hearing everything, so if I wasn't looking at you while you were making your comments I was just making sure you were being -- getting down on the record there.

Does anyone else have any -- wish to address the presentation tonight? Anyone from the audience? Sir, I would suggest that you come up here, since we don't have a mike and we want to get your comments with the reporter, please.

MR. SOUTHARD: For the record, Burle Southard, Vallejo, unincorporated homemakers' area. I'm also a member of the Mare Island RAB. We've been discussing the cleanup issues and the Super Fund issue with some of my neighbors, and we're concerned that the EIR/EIS doesn't seem to address this issue. There was an article in the -- in the newspaper, the local newspaper regarding this, and I was wondering if there was anybody in the audience, maybe Dennis or Ann or

PHD-1

someone that would know if this is going to be part of the Environmental Impact Report or Environmental Impact Statement, or is this going to be not part of this? Would anybody know?

MR. POMEROY: Generally we were here to take your comments tonight, so if we understand your comment correctly it would be that you have a concern that we address the proposed -- the possible Super Fund designation of Mare Island in the final EIS/EIR; is that correct?

We might have someone who would be able to help you with more of the details afterwards, but we're mainly trying to solicit your comments on the EIS/EIR document tonight, and if that's an accurate representation of your comment we would have that for the record.

MR. SOUTHARD: Okay. Then I guess my -- that seems okay, but my -- the other part of my question was, have the environmental contaminants the extent of them -- you know, to get on the Super Fund site, I guess, you know, it has to be pretty bad; and has this been addressed in the planning so far? And that's really my question. Well, the other half, will it be -- has it been so far, to what extent? I was wondering if somebody could answer that.

PHD-1 (cont.)

PHD-2

MR. POMEROY: We're really here to take comments on the document, and we probably have some people after we're finished with the formal comments who can give you more details about how that's sort of gone through the planning process.

MR. KELLY: Burle, I'll be glad to talk to you afterwards.

MR. SOUTHARD: Okay. Also, the economic issues -- I know in an EIR, unless there's provisions for the -- for the money to implement a plan, that the plan can't go forward. Often there are zoning changes, lots of other changes, and in the past there's been plans that have gone through, and zoning changes, and certain parts of the plan were adopted and effected -- effectuated, and then due to lack of funds other parts of the plan that would maybe make -- make the plan environmentally benign were not able to be -- to be done; and so it's my understanding that the economics, the money, and where the money is going to come from have to be addressed and -- in an EIR. Now I don't know about an EIS, maybe that would be different, but maybe you can answer that. Is it the same or not? PHD-3

MR. POMEROY: Again, that's something that

we can address as a comment in the final document; but we're really here in the receiving mode to listen to what your comments are, as opposed to try and give you an answer to that tonight. So that we'll take as another comment that you have on the Draft EIS/EIR, which we can answer in the Final.

MR. SOUTHARD: Okay. Then, when would we be having this, these answers in this --

MR. POMEROY: As we mentioned earlier in the meeting again, the current expected date for the final EIS is this December, to have that document out and available.

MR. SOUTHARD: Will there be a meeting before then or is that it?

MR. POMEROY: This would be the public comment meeting; then that document would be -- would be provided and generally there's not an additional meeting, but there is a possibility of commenting on the document on the Final EIS.

MR. SOUTHARD: Okay, then that might be our only other time for a public comment would be then, now and then, so it might be these two.

MR. POMEROY: On that particular document, yes.

MR. SOUTHARD: Thank you.

LT. CDR. BROVARONE: Thank you, sir. Is there anyone else? Mr. Osborne, do you want to continue your list there for a little bit?

MR. OSBORNE: John Osborne, Vallejo, continuing my comments.

Section 4.8, Geology and Soils, Table 4-15 should contain -- should address the contamination of soils particularly in manholes and utility vaults, and the EIS/EIR should address the impact on the maintenance of those -- of utilities and the impact -- well, effect of any contamination on improvements. In that same section regarding soils, there should be an assessment of the effect on the soils on the street maintenance, and the cost of street maintenance. PHB-19 PHB-20

Section 4.10, Air Quality. The landfill gases should be included in Table 4-22; there's other mention elsewhere in the report of landfill gases being detected. PHB-21

Section 4.11, Noise, noise and land use compatibility for the residential development and the PWC maintenance area redeveloped as residential is not addressed with the proximity of the railroad maintenance building. PHB-22

Section 4.12, Utilities, presence of PHB-23

hazardous materials in utility manholes, tunnels and trunks is not addressed. What I would -- was unclear to me in reading through, if the hazardous materials encountered during reuse, who will pay for the mitigation if it occurs some time out in the future? And the basis of that question is, in the Executive Summary on page four and five, those pages both indicate that, after disposal, no additional NEPA review is required; and on page 1-14, following disposal, no additional NEPA review, and then it says, "The Navy is not subject to CEQA when federal sovereignty has not been ceded." That particular sentence, "The Navy is not subject to CEQA when federal sovereignty has not been ceded," has two negatives in it and it's confusing.

4.12, Utilities, continued, who will pay to mitigate items not mitigated at disposal? And again, related to utility trunks and vaults. The impact of abandoning utility systems such as fuel, oil and steam should be addressed.

4.12, Utilities, continued; the EIS indicates some of the dredge lines are not in good condition. My question is, it should be clarified, who will have the responsibility for maintaining or fixing those dredge lines not in

(cont.) PHB-23

PHB-24

PHB-25

PHB-26

PHB-27

PHB-28

good condition?

There's an indication the emergency generators for dry dock pump houses might be removed. Is there an impact related to that? PHB-29

Appendix C, Table C-3, Hazardous Material Spills, lists over 250 spills in the last ten years, none before 1985. There must be some records that indicate some spills before 1985, and so I think they should be included. PHB-30

In reading the EIS, there was talk about facility landfill area; it wasn't clear to me exactly whether that meant an engineered fill, a dump, or what's in that landfill? That should be clarified, again related to the fact there is -- part of the Proposed Action is to put residential in the PWC maintenance area. PHB-31

Some editorial comments on pages 2-19, 2-20, 2-24, related to the description of some land that might be reversionary land to the State, compass directions appear to be in error. PHB-32

On page 3-3 there's a sentence, "Other several overhead cranes"; it's an incomplete sentence and does not appear to make sense. PHB-33

Roosevelt Terrace on page 3.6 addresses the construction with cinder block, it does not say whether it's reinforced or just cinder PHB-34

block. If it's unreinforced cinder block, there should be an assessment as to the earthquake ramifications of that.

PHB-34 (cont.)

I have a couple comments on the process, actually fortified by the lack of turnout of citizens of Vallejo. My name was on the EIS/EIR mailing list in the document on page B-26. I get a one-page letter that says, if you want to read it go to the library. I go to the library, they say, well, we haven't gotten one for you to check out. The document really is too voluminous for the public to review sitting in the library. So I think it's misleading to have a list in the document that includes people's names on the mailing list and all they get is a page that says go to the library.

PHB-35

I think also, based on the turnout of citizens of the City of Vallejo, I'm not sure they're clear on the process, and I think there needs to be something done before this process comes to an end that the citizens of Vallejo are a little clearer on the -- on what's happening here. I'm really disappointed with the number of people that aren't here on this.

PHB-36

I left my address and phone number for the record. I have gone through these comments very

quickly in relation to your time constraints; if any of them aren't clear, and they might well not be, I'd appreciate telephone contact or whatever if there's any questions at all. Thank you.

MR. POMEROY: We also encourage you to follow up with written comments as well if you have the time to do it, and that way we're sure that we have exactly what you say as well as the transcript. We certainly encourage you to do so, but that's up to you.

MR. OSBORNE: If I could reply just briefly on that again, the process is flawed from my standpoint as a citizen, and I made up these cards going through the document; I have no way to refine that to put it in writing and go back. I made notes just to speak from, so it really isn't convenient for me to try to go sit in the library and read the document and come up with written comments. So I think there -- I know the document's thick and it's expensive, but there needs to be a better way to get this to the public, because saying it's in the library and expecting people to go sit in the library and read it, that doesn't work. Thank you.

MS. MERIDETH: Could I just respond, Mr. Osborne. Copies of all these are available in

the Planning Division. We have boxloads of them, and people have been coming in all the time to pick up copies, so if Mr. Osborne wants to come in tomorrow morning you can have your own copy. We have been handing them out regularly, free of charge.

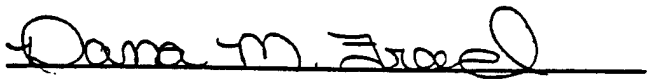
LT. CDR. BROVARONE: I think we have covered all the speakers tonight, so on behalf of the Mayor and Captain Cavender, I'd like to thank you for your participation in this, in receiving your comments. We do have a view graph with some points of contact and addresses and phone numbers for providing written comments, either through the mail or through the fax, to either Mr. Pomeroy or to Ms. Merideth. We'll leave that up there for a while so you can copy that down. Thank you very much for attending this evening. Have a good evening.

(At 8:35 p.m. the foregoing public hearing was concluded.)

CERTIFICATE OF PROCEEDING OFFICER

I, DANA M. FREED, duly authorized to administer oaths pursuant to Section 2093 of the California Code of Civil Procedure; that said proceeding was taken at the time and place therein stated; that the testimony of said witnesses was reported by me and was thereafter transcribed under my direction into typewriting by computer.

I further certify that I am not of counsel or attorney for either or any of the parties in the foregoing proceeding and caption named, or in any way interested in the outcome of the cause named in said caption.



Dana M. Freed

Response to Comment PHA-1: The EIS/EIR is revised to reflect the fact that transfer of land to other Federal agencies is not a part of the disposal of surplus land and reuse action. Any potential effects of this transfer are therefore addressed in Section 5.5, Cumulative Impacts. Use of dredge ponds on land being transferred to USFWS would not be subject to control of the Navy or Vallejo. The USFWS would be free to consider potential cooperative use agreements with other landowners in the vicinity and would be responsible for any related environmental documentation. See also the response to comment D-1.

Response to Comment PHB-1: There are no identified land use conflicts resulting from proposed residential development locations under the Reuse Plan Alternative.

Response to Comment PHB-2: The referenced passage in the EIS/EIR refers to disposal of the site only, without reuse. This would result in only a minimal increase in demand for city fire and police protection, compared with existing conditions, and, as stated, would not result in a significant adverse impact.

Response to Comment PHB-3: The row titled "Condition of grounds and facilities" in Table 4-1 has been deleted.

Response to Comment PHB-4: The shipyard is closed and most existing housing units are not in use. Disposal of existing housing units is a transfer of ownership and, as such, would have no physical effects on the environment. Effects of reuse of the existing housing units is addressed under the 3 reuse alternatives. Effects of long-term Navy caretaker status for the housing units is addressed under the No Action Alternative.

Response to Comment PHB-5: Table 4-2 focuses on socioeconomic effects, not physical infrastructure systems. Effects of construction and maintenance of utility systems is discussed in Section 4.12, Utilities. The roadway infrastructure is discussed in Section 4.9, Traffic and Circulation.

Response to Comment PHB-6 and PBH-7: See the response to comment PHB-2. Tax revenues generated by development would be expected to pay for police services.

Response to Comment PHB-8: The reference was to Vallejo as the Local Redevelopment Authority (LRA) recognized by the Department of Defense as the agency responsible for developing a redevelopment plan for Mare Island. Upon property conveyance, Vallejo could establish a redevelopment area under state laws at Mare Island but has not done so at this time. Should a redevelopment district be established, Vallejo, through the City Council, will continue to be the LRA. Redevelopment would function through the Redevelopment Agency as a financing tool for economic development and infrastructure improvement purposes only.

Response to Comment PHB-9: The Redevelopment Agency would not "oversee" Mare Island. Tax increment funds generated by the redevelopment district would be reinvested into the district.

Response to Comment PHB-10: Since circulation of the Draft EIS/EIR, Section 106 consultation has been completed and a MOA has been executed. Mitigations have been identified in the MOA that provide short- and long-term protections to cultural resources. Many of the mitigations would be completed prior to property disposal. Uncontrolled access to culturally sensitive sites would not be permitted to the public under any of the Navy or community reuse actions, and impacts are therefore not considered significant.

Response to Comment PHB-11: Section 4.4, Cultural Resources, has been substantially revised to reflect that the completed MOA sets in place a series of steps that have been taken or will be taken to ensure that historic preservation is given a priority in the reuse. Some of these steps will be taken by the Navy, some by Vallejo. The provisions of the MOA are outlined in Section 4.4, and the MOA is included in Appendix D. This MOA also is discussed in the responses to comments C-5 and C-6.

Response to Comment PHB-12: As discussed in the EIS/EIR Section 4.7.2, under Surface Water Quality, Nonsignificant Impacts, sewer cross-connects are not considered to be a potentially significant impact because the Capital Impact Program proposed as part of the reuse plan would eliminate the cross-connects.

Response to Comment PHB-13: The issue of unexploded ordnance is addressed in Section 4.13, Hazardous Materials and Waste.

Response to Comment PHB-14: A standard clause in leases authorizing interim use of specific property and facilities at Mare Island includes notification/restriction to avoid contact with ground water.

Response to Comment PHB-15: The passage referred to is in EIS/EIR Section 4.13.2 under the discussion of Ordnance. Because the Dike 14 area would be remediated prior to disposal by the Navy and would be placed off- limits to the public until such remediation occurs, this impact is not considered to be potentially significant.

Response to Comment PHB-16: Issues regarding remediation of contaminated soils and hazardous materials are addressed in Section 4.13, Hazardous Materials and Waste.

Response to Comment PHB-17: Figure 4.1 has been revised to be consistent with the text.

Response to Comment PHB-18: It is noted that the bikeway along Tennessee Street is marked by only a few signs and that, due to traffic conditions, this may not be a desirable route for bicyclists to use.

Response to Comment PHC-1: It is acknowledged that demolition of certain structures and development of structures would increase landfill needs and would result in an increased short-term consumption of energy and resources, compared with reuse of existing structures. The exact structures that would be reused or demolished have not been identified. Recycling or reusing wood, metal, glass, and brick from structures to be demolished would substantially reduce quantities of materials disposed of in landfills and would reduce energy consumption associated with fabrication of these materials. The project's use of materials and energy resources is addressed in EIS/EIR Section 5.3.

Response to Comment PHC-2 and PBH-3: The effect of housing cost on traffic is speculative and not considered in this analysis.

Response to Comment PHC-4: All new and upgraded structures would be developed to meet Title 24 energy conservation requirement.

Response to Comment PHC-5: The Navy will continue to be responsible for required environmental cleanup of the site. The public will not be granted access to contaminated areas, but will have access to former contaminated areas once remediation is in place.

Response to Comment PHC-6: If the IDC is formed (which has not been decided), it would not represent the city; it would be an entity separate from the city, and, as such, it would be expected to carry its own insurance or be self-insured using revenues provided to it through reuse activities. All the leases between the city and its tenants include a notice about possible contamination and require tenants to carry their own liability insurance.

Response to Comment PHC-7 and PHC-8: The comment provided by the speaker is on strictly financial aspects of the Mare Island Reuse Plan. Such financial arrangements are not considered environmental impacts and are therefore not analyzed in the EIS/EIR.

Response to Comment PHC-9: The commenter's concerns are noted.

Response to Comment PHC-10: Lead-based paints are addressed in EIS/EIR Section 4.13, Hazardous Materials and Waste. Lead-based paint hazards in housing constructed prior to 1960 would be abated by the Navy.

Response to Comment PHC-11: CEQA requires that economic or social effects of a project shall not be treated as significant effects on the environment. An EIS/EIR may trace a chain of cause and effect from a proposed decision on a project through anticipated economic or social changes resulting from the project to physical changes caused in turn by the economic or social changes. The intermediate economic or social changes need not be analyzed in any detail greater than necessary to trace the chain of cause and effect. The focus of the analysis shall be on the physical changes, Cal. Pub. Res. Code, §21000, *et seq.*; Guidelines, §15131(a).

This requirement means that there must be a direct physical change in order for that change to be analyzed as a potential environmental act under CEQA. Property values are not physical changes that may be forecast from changes in land use and ownership and are therefore not analyzed because the information supporting such an analysis is lacking, is based on conjecture, and is not reasonably foreseeable, 40 C.F.R., §1502.22(b)(1). CEQA Guidelines, §15145, says that "If, after thorough investigation, a Lead Agency finds that a particular impact is too speculative for evaluation, the agency should note its conclusion, and terminate discussion of the impact," Cal. Pub. Res. Code, §21000, *et seq.*; Guidelines, §15145 (Office of Planning and Research 1995).

NEPA analysis of these indirect effects, 40 C.F.R., §1508.8(b), with respect to the appropriate regional and local contexts, 40 C.F.R., §1508.27(a), and a balanced consideration of the adverse nature, public health and safety implications, geographic and ecologically critical areas involved, likely future controversy, uncertain or unknown risks, presidential inference, and related measures of the intensity of these indirect effects does not warrant their identification as significant, 40 C.F.R., §1508.27(b).

Response to Comment PHC-12: Transit system impacts are addressed in Section 4.9, Traffic and Circulation. The merits or feasibility of attracting specific industries, such as the manufacture and service of electric light-rail vehicles, is not within the scope of this EIS/EIR. The merits and environmental effects of specific proposals will be addressed in subsequent specific planning efforts and future CEQA documentation.

Response to Comment PHC-13: The Medium Density Alternative and Open Space Alternative are intended to consider different densities, locations, and types of uses within the context of the overall reuse plan concept.

Response to Comment PHD-1 and PHD-2: Mare Island is not now on the Superfund list. Superfund status is discussed in Section 3.13, as is the status of all other environmental cleanup programs. An overview of the specific compliance requirements of other environmental programs is given in Section 3.13, but detailed descriptions of all aspects of each compliance program is beyond the scope of the EIS/EIR.

Response to Comment PHD-3: The proposed land use plan would be implemented in stages as developer interest and public and private funding becomes available.

Response to Comment PHB-19, PHB-20: See the response to comment PHB-12. The effect of soils erosion is included as part of the overall Erosion and Sedimentation heading on Table 4-14. The primary generator of soil on streets is construction activities. Grading permits for activities likely to generate substantial dust and soil on streets are generally conditioned to require the contractor to clean up or be liable to clean up soil eroded from or spilled onto streets as part of constructions. Also, the SWPPP referred to in Section 4.7 requires erosion control both during and after construction.

Response to Comment PHB-21: As discussed in EIS/EIR Section 3.13.3 under IR01 and IR02, landfill gas testing shows that no landfill gas is migrating beyond the landfill boundaries. A minor amount of landfill gas will pass into the atmosphere through the cover material, but this gas is primarily methane and carbon dioxide, which pose no local air pollution problems. Methane is not considered a photochemically reactive organic compound and thus is not an ozone precursor.

Response to Comment PHB-22: Noise-related land use compatibility issues are addressed in EIS/EIR Section 4.11.

Response to Comment PHB-23: Presence of hazardous materials in manholes is mentioned in Section 3.12.6.

Response to Comment PHB-24: As stated in Section 4.13, Hazardous Materials and Waste, the Navy intends to remediate all property prior to conveyance. Assuming that the property has been remediated, no mitigation related to hazardous materials would be required in the future, and no costs would be involved.

Response to Comment PHB-25: See response to comment PHB-12. The statement that the "the Navy is not subject to CEQA when Federal sovereignty has not been ceded" refers to the Supervacy Clause of the US Constitution, under which Federal agencies are not subject to state law unless Federal sovereignty has been ceded.

Response to Comment PHB-26: The LRA would determine responsibility of costs for mitigations not borne by the Navy. As noted earlier, remediation of contaminated sites is the responsibility of the Navy.

Response to Comment PHB-27: As noted earlier, remediation of contaminated sites is the responsibility of the Navy. Utility line abandonment is addressed in Section 4.12 (see, for example, the discussions of gas service).

Response to Comment PHB-28: Whoever operates the dredge lines will be responsible for maintenance.

Response to Comment PHB-29: No environmental impacts would be associated with removal of emergency generators for dredge lines.

Response to Comment PHB-30: Systematic recordkeeping for spill events was not initiated until the mid 1980s; the earliest reliable records at Mare Island Naval Shipyard date to 1985.

Response to Comment PHB-31: The fill referred to would be engineered fill.

Response to Comment PHB-32: The referenced directions noted in EIS/EIR Section 2.3.1 for Reuse Areas 7 and 8 have been deleted. The direction noted for Reuse Area 12 has been corrected to read as follows:

> "A small portion of this reuse area (approximately 10 acres) also is located on state reversionary land."

Response to Comment PHB-33: The referenced text has been revised by combining it with the previous sentence.

Response to Comment PHB-34: Roosevelt Terrace units are constructed of reinforced cinderblocks. It is not anticipated that redevelopment of these units would require seismic upgrade prior to reuse, unless the redevelopment of these units impacts the integrity of the cinderblock construction.

Response to Comment PHB-35: Due to the large number of people on the EIS/EIR mailing list it is infeasible and would be extremely expensive to send copies of the EIS/EIR to every person on the list. For this reason, persons on the mailing list are notified that the document is available and where copies may be reviewed. Many people simply want to be kept informed of the status of the environmental review process. Anyone on the list, however, may request to receive a copy of the document.

Response to Comment PHB-36: The Navy and Vallejo have made every effort to make sure that the public and regulatory agencies are informed of the status of the reuse planning and environmental review process for disposal and reuse of Mare Island Naval Shipyard. Please refer to Appendix B for a description of the public involvement efforts for the project. See also a summary of public involvement in Section 1.6, Public Involvement Process.